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## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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### AIDS TO NAVIGATION.

An effort will be made to get delegates from all the lodges of the Shipmasters' Association together during the next few weeks for the purpose of preparing a list of aids to navigation that are wanted especially in the Soo river, where some changes have been recommended by Commander J. C. Wilson, U. S. N., inspector of the eleventh Light-house District. Masters and pilots are anxious to have a list fixed in time to be presented at the annual meeting of the Lake Carriers' Association, which will be called at Detroit Jan. 16.

Capt. George P. McKay, chairman of the Lake Carriers' committee on aids to navigation, furnished the masters with a copy of Commander Wilson's report containing the changes and aids to navigation recommended to be established at the opening of navigation, 1901. The captains are in favor of all that has been recommended, but they say that Commander Wilson should have gone further. They want nine more gas buoys for the Soo river, but they will probably not decide where they should be placed until a meeting of delegates from all the lodges is held. Capts. Ennes, Cumming and Greenly were appointed a committee to take charge of the matter and they will communicate with the officials of the other lodges of shipmasters.

The recommendations contained in Capt. Wilson's report provide for four additional gas buoys and six additional spar buoys and the discontinuance by replacement of one second class nun buoy and two second-class can buoys. There are now twenty-two gas buoys on hand in the district, all of which, including one authorized by the board to be established off Pointe Aux Frenes, at the southern entrance to Mud Lake, St. Mary's river will be in use at the opening of navigation, 1901, leaving no spare ones on hand. Commander Wilson says that there should be at least four spare ones for the district, one at the Soo, one at the St. Mary's river buoy depot and two at the buoy depot at Detroit. There are now four gas buoys used in Lake St. Clair, twenty-foot channel, in place of the crib lights which were carried away by the ice, but it is not yet known whether these crib lights will be re-established, or the gas buoys kept in their places. In case the crib lights are re-established, four gas buoys will become available for use elsewhere, but whether they are or not, at least four additional gas buoys will be required for the district at the opening of navigation, 1901.

In closing his report, Commander Wilson says: From these four additional buoys I recommend that one be estab-

lished on Martin reef in Lake Huron and one on Mackinac spit, off Mackinac Island, Michigan, which would leave two spare ones on hand, the one for Thunder Bay and the one for Grovelly point, to be established later, either from the four extra ones now in use in Lake St. Clair or by new ones in case the crib lights in the twenty-foot channel were not re-established.

Vesselmen will give all possible assistance to officials of the Light-House Board in their effort to secure from the present Congress an appropriation for a second light-house tender for the eleventh district, the vessel to be used especially on the St. Mary's river. The work of the eleventh district is increasing and has already reached such an extent as to make it difficult for the inspector of the district with one small tender to supply and inspect all the stations and tend the necessary office work. But aside from this it is quite generally agreed that the contract system of caring for buoys is far from satisfactory. The new vessel would take up this work. A suitable craft with a gas carrying plant could be built for about \$60,000. The full benefit from new buoy depot on Sugar Island in the St. Mary's river will not be secured until such a tender is provided. This depot will always be a convenience for the storage of buoys and appendages, but if stores and supplies for the river and adjoining stations have to be transported from Detroit to this depot by the Marigold, the vessel now in service, and from there distributed to various stations in the river, it would be easier and cheaper to transport them from the buoy depot at Detroit direct to the various stations.

Among duties proposed for the new tender are the following: First, to place all buoys in the river at the opening of and take them up at the close of navigation each year; second, to obtain stores and supplies from the supply depot in Detroit and distribute them to the various stations in and adjoining the St. Mary's river; third, to paint all buoys and inspect and fill all the gas buoys and care for certain lights now in charge of laborers in the St. Mary's river; fourth, to make a daily patrol of the river and (in case a junior officer could be ordered to the district) to inspect and take charge of all lights, stations and buoy work in the river, the inspector making an annual inspection and such other trips of inspection as he may think desirable.

The Light-House Board has asked Congress for an appropriation amounting to \$234,500 for aids to navigation in the tenth district, which includes the waters of Lake Erie and Lake Ontario on the American side. In the annual report of the board, made public to-day, it is stated that plans for a keeper's dwelling at the proposed light and fog signal station at the main southern entrance of the new breakwater at South Buffalo are being proposed. Plans for the light and fog signal house have been finished.

The board urges strongly that \$2,000 be appropriated to establish a light at Fort Niagara, so that the river may be safely available at its mouth as a harbor refuge for vessels on Lake Ontario. The report reviews in detail the work recently accomplished in connection with the light station at the main entrance to Buffalo harbor and at the harbor of Dunkirk.

It is urgently recommended that some provision be made for obtaining gas for buoys at a point between Syracuse and Detroit preferably at Buffalo.

The old light-house tender, Haze, is pronounced totally inadequate for the duties required of the vessel, and the recommendation is strongly made that a new tender be provided. The estimate of \$85,000 for that purpose has been increased to \$120,000 on account of the prevailing high prices for materials.

### GALVANIC ACTION OF COPPER SHEATHING.

The opponents of copper sheathing for our warships will find strong confirmation of their criticism in the very ugly discovery that was made the other day on the British cruiser Ariadne, and later on another cruiser, the Spartiate. Copper sheathing was introduced to enable ships to remain at sea for longer periods than is possible when the steel plating of the hull is unprotected. The theory is good, and the practice of it would be equally so were it not for the disadvantage that the galvanic action of copper on other metals in the presence of salt water is liable to be very destructive. As long as the metal bolts which fasten the wood sheathing to the inner steel hull can be kept perfectly watertight, and the salt water prevented from getting in contact with the steel hull, sheathing is no doubt an excellent device; but experience seems to prove that it is extremely difficult to preclude conditions favorable to galvanic action. In some cases the steel plating has been badly attacked, while in others, the fitting of the sea valves and other outboard connections have been seriously damaged. During the latter part of August, the Ariadne, a new British cruiser of 11,000 tons displacement and 21 knots speed, was found to be leaking rapidly while at her moorings. The leak was of such dimension that it was assumed that a Kingston valve had inadvertently been left open.

After the vessel had been hurriedly docked, it was ascertained that the corrosion of the bolts, both inside and outside of the ship, had been so extensive that the mounting of one of the under-water fittings had fallen off, allowing a great inrush of water. The corrosion of the outer bolts of the Spartiate, a sister ship, had previously been detected, and on docking the vessel it was found that the inner bolts had also been corroded. Referring to this most serious incident, The Naval and Military Record pertinently remarks: "One cannot fail to smile at the comic side of the question, since here we have ships coppersheathed in order that they may keep the sea for lengthened periods, and yet, because they are coppersheathed, they cannot go through the peace maneuvers without becoming so leaky as to threaten their own safety."

We understand that signs of similar corrosion at the same point have appeared in our own sheathed cruiser New Orleans; and, in view of these facts, we think that a most searching investigation of the whole subject should be made before we proceed with the proposed coppersheathing of our own cruisers and battleships. Certainly the incident will greatly strengthen the position of the opponents of coppersheathing.—"Scientific American."

The complete report of the Deep Waterways Commission was sent to the House of Representatives December 7 by Secretary Root. The project before the commission is one of vast magnitude for deep waterways between the Great Lakes and Atlantic tidewater. The estimated cost of a 21-foot waterway is given at \$206,358,000, and of a 30-foot waterway at \$317,284,500. An additional estimate is made for deepening the harbors at Chicago and Duluth, making the total aggregate for the 30-foot channel of \$326,992,000. The cost of annual maintenance of the 21-foot waterway is given at \$2,343,478, and of the 30-foot waterway at \$2,930,308.

A BILL is to be presented to the Illinois legislature where by the vast quantity of lime rock excavated in the construction of the Chicago drainage canal will be utilized by convict labor in providing good roads in any section of the state upon the payment of a nominal sum per yard by the locality desiring good roads.





## CHICAGO.

*Special Correspondence to The Marine Record.*

The Shipmasters' Association, Chicago Branch 3, will give their ninth annual reception and ball on Thursday evening, January 24th, 1901, at the Medina Temple hall.

At the Chicago Ship Building Co. shipyard the steamer Huron was in drydock for repairs to bottom and calking, the steamer Livingstone had her bottom calked, the steamer W. P. Ketchum had stern bearing repaired, the steamer Holden received repairs to bottom.

The first of the Counselman fleet of steamers will be launched at the Chicago Ship Building Co.'s shipyard on Saturday, December 29th. Her dimensions are 256 feet over all, 26 feet 6 inches molded depth, 42 feet beam. She will be taken to the Atlantic ocean for service when completed.

The officials of the Canada Atlantic line announced that another steamer of 5,000 tons capacity will be added to their fleet next spring and all of their ships they operated during the past season will be retained. It is likely that a coarse freight carrier will be purchased and remodeled with main deck and package freight gangways.

The new tug John E. May, built at Manitowoc by Burger & Burger, shipbuilders, for Judge Thos. Bradwell, of this city, arrived here Wednesday afternoon, December 19th. She is a handsome, well-built tug. Her dimensions are 75 feet long, 17 feet 6 inches beam, 7 feet hold. She was inspected by U. S. Local Inspectors Richardson and Moore on Saturday.

Marine underwriters have come out better from their business on the lakes during the season just closed than they did during many previous years. The long list of losses comprised mainly vessels which had attained an age which prevented insurance. Then some of the heaviest losses came to fleets whose owners took their own risks. In 1898, the year of greatest losses to lake vessels, luck seemed always against the underwriter.

The following vessel transfers have been recorded at the Grand Haven custom office recently: Schooner Experiment, sold by John Watt, of Ludington, to Eliza J. Ludwig, of same place, consideration \$300; schooner Anna E. Morse, sold by Albert A. Potter, of St. Joseph, to Mary A. Potter, same place, consideration \$600; schooner Grayling, sold by Edwin Austin, of Cheboygan, to H. E. Todd, same place, consideration \$70; schooner Volunteer, sold by William H. Stiles, of Traverse City, to M. C. Snow, same place, consideration, \$170; schooner Wanderer, sold by Thurston Banister, of Bayport, to Dan Seavy, of Frankfort, consideration \$600; scow Essex, sold by George C. Abbot, of Northport, to Sylvester S. Eubor, same place, consideration \$250; steamer Onekema, sold by John U. Emery, of Old Mission, to Edwin M. Emery, same place, consideration \$1,000; tug T. W. Ferry, sold by William Habel, of St. Joe, to Arthur Habel, same place, consideration \$900.

Michael Barry, aged 44 years, died Wednesday afternoon, December 19th, of pneumonia, at his home 44 Cass street. He was born near Kingston, Canada, and left there in the seventies to join his brothers at Muskegon, Mich., in the tug business, which they carried on successfully until 1889, when they all came to Chicago and by their steady perseverance and unity succeeded in establishing and carrying on one of the largest and most successful towing businesses Chicago ever had. They sold out that business to the Great Lakes Towing Co. in 1899, and purchased the Huron Transportation Co.'s business and steamers, which run between Chicago, Racine and Milwaukee. They also run steamers between Chicago and Muskegon and Waukegan and Kenosha. The deceased leaves a widow and six children. The funeral took place Friday morning. Service and mass were celebrated at the Holy Name church, and the interment was at Calvary cemetery. There was a large attendance of marine men and other friends of the deceased.

President Jones, of the drainage board, Monday ordered the full legal flow of 300,000 cubic feet of water a minute turned on in the Chicago river and the sanitary channel. Ever since the opening of navigation last spring the flow through the controlling works at Lockport has been limited to 250,000 cubic feet a minute in order to give as little annoyance to vessels as possible. Today, however, President Jones decided to comply with the spirit and letter of the sanitary law, which requires that at least 300,000 cubic feet of water a minute be admitted into the channel for the purpose of diluting Chicago's sewage before it passes into the Illinois valley. President Jones declares that this flow will be continued indefinitely unless the conditions created are such that it is positively dangerous to river property. The results of the increased flow in the river were apparent in Chicago within a few hours after the bear-trap dam had been adjusted to meet the new conditions. The velocity of the current in the stream was materially increased at every

narrow portion of the river, at several points the speed being estimated at four miles an hour. Vesselmen say that this speed is disastrous to navigation and that great loss will result to marine interests, unless the conditions are changed.

A complete change in the system of unloading iron ore cargoes, by which shippers will pay for the unloading instead of vessel owners, is now receiving the attention of marine men all over the lakes, and it is likely that the change will be made the coming winter. It will do away with the numberless strikes and all kinds of trouble between vessel masters and the gangs of workmen unloading their ships, and it is claimed it will result in a decided benefit in the general handling of labor on the docks. The amount paid for carrying ore will bring it to the ore receiving dock. The rates will be figured on the old basis, less the handling charges. It is said that the anxiety of vessel owners to get their boats out of port has had a tendency to corrupt the unloaders, who have come to think more of the extra bonus given them at critical times than of their regular pay. A good many abuses have crept in, and the only way to correct them was to do away with the whole system. On Chicago river, where the same conditions are experienced in loading grain, it is the invariable rule of Armour & Co. to allow no direct payment from the vessel owner to the firm's employees for extra work. All such matters are handled by the firm. The same rule is followed by the other grain companies. The result has been that nowhere on the lakes is less trouble experienced in loading vessels during overtime and on Sundays than in Chicago.

## BUFFALO.

*Special Correspondence to The Marine Record.*

James Cuthbertson, employed as watchman on the schooner Australia, fell from the boat into the Coit slip Tuesday afternoon and was drowned. Just how the accident occurred has not yet been learned by Coroner Wilson, although it is supposed the slippery condition of the deck of the boat was responsible for Cuthbertson's death. The body was recovered.

Sir Louis Davies, minister of marine, intends recommending to the government the appointment of a royal commission to inquire into the whole question of the navigation of the St. Lawrence, including the heavy insurance rates on vessels and cargoes going by that route. Sir Louis also contemplates the establishment of compulsory pilotage between Montreal and Kingston. Pilotage is not now compulsory above Montreal.

The Independent tug line is preparing to fight the trust in a somewhat different way next season. Its friends say that a stroug fight and a generally good management has won a satisfactory following and that a big effort will now be made to secure a liberal number of season contracts with vessel owners for towing, and if a list sufficiently long is secured there will be a fleet of new tug boats built this winter that will surpass anything that has been attempted before. There is a rumor that Captain James Davidson is looking for the work. It will be sometime before anything definite is known, but if the tugs are built at all they will be ready to begin business with the season. The Independent line has brought together a fleet of twenty-eight tugs this season, and with these it has covered eight or nine ports. It may happen that the line will throw up the sponge, but the indications are now that instead it will open the next season better equipped than ever.

Maj. Thomas Symons, of the Corps of United States Engineers, has prepared an interesting paper for the American Society of Civil Engineers, on the "Canals From the Lakes to New York," in which he says in part: "The decline of traffic on the Erie canal is due to very many causes, the principal ones being that it is not in any matter up to date; that the towing is still being done on it largely by horses and mules, and that the business has never been organized and conducted on modern lines. It has been seriously handicapped by the fact that improvements have been undertaken and discussed which would render the old type and size of boats obsolete, rendering it inadvisable as a business proposition for people to build new boats for canal business or to replace those outworn, with the possibility before them of a larger canal in the near future. That the traffic on the Erie canal has declined is true, but it would spring up and grow to enormous dimensions if a proper barge canal were built in its place, if legislative restrictions on the capital of operating transportation companies were removed, and if the business were organized in a thoroughly up to date manner. It must not be forgotten that if the Erie canal has stood still, or worse than still, for the last thirty years, the competing railroads have improved their transportation facilities enormously in ways which it is unnecessary to recount here."

The largest freight carriers of canal dimensions in existence will ply through the Montreal port to the upper lakes next season, according to Mr. William Peterson, of the firm of William Peterson, Limited, of New Castle-on-Tyne, which firm will place a few of their turret steamers on the upper lakes' general trade next year. These boats will steam about thirteen miles an hour, and will be the largest vessels of canal dimensions in the world. They are of 3,250 gross tons, dead weight capacity, on an eighteen foot fore draft and 2,000 tons on a fourteen foot draft, fresh water. This would give a capacity of about 75,000 bushels of wheat.

## DETROIT.

*Special Correspondence to The Marine Record.*

It is reported that the Jenks Shipbuilding Co., of Port Huron has just secured a contract for a steel steamer (a lumber carrier), making three steel steamers which they now have under order.

F. W. Wheeler is having two passenger and freight steamers built by the Craig Ship Building Co., of Toledo, for delivery the coming summer, and he has chartered them for four years to run in the West Indies and South American Trade. They will be 260 feet in length, 38 feet beam and 25 feet hold. It has been hinted that Mr. Wheeler intends to order two more boats of the same class, but he declined to confirm the statement.

Charles A. Chamberlain and H. W. Baker, owners of the tug Champion, have filed a libel in the United States court here against T. E. Nagle, W. H. Holcomb and A. P. Hopkins of Chicago, shippers and owners of a cargo of cedar posts, shipped on the barge Black Diamond, which became water-logged in Search bay October last. The Champion went to the assistance of the boat and cargo, and brought them to Detroit. They want \$1,500 for their work.

A dispatch from Washington says: Gen. Spaulding reduced the fine imposed by the collector of customs at Detroit against the tug Dew for the violation of the rules of navigation of St. Mary's river, from \$200 to \$15. In the case of the Cananian tug Charlton, charged by the collector at Port Huron with carrying passengers and held for confiscation, Gen. Spaulding directed the district attorney to discontinue the proceedings. The record in the case shows that the tug had gone to some seamen in distress and that the carrying of passengers was simply an act of humanity. The case has been pending before the department since September.

Vesselmen at Sandusky are asking for the assistance of the Lake Carriers' Association in trying to secure a white flash light at Marblehead station, Lake Erie. One of the Sandusky captains says: "Of late years a great many freighters pass that way. Three strandings occurred during the past season on account of a light on Kelley's Island being taken for the Marblehead light." The change is suggested now because of improvements that have been under way at the Marblehead station, but it would seem that the suggestion comes too late, as the improvements have been completed and it is officially announced that a fixed white light of the fourth order has been established at the station.

The Davidson dry dock at Bay City has been placed in service after a satisfactory test of the pumping machinery. When full, the big basin contains a trifle less than 5,000,000 gallons of water, and this amount was pumped out in one hour and forty minutes, establishing what is claimed to be a record for dry dock service. The pumping machinery is of the latest improved type. There are two pumps, each having a pumping capacity of 21,000 gallons per minute, discharging the water through a 20-inch outlet. The power is furnished by a 325-horse power Hamilton-Corliss engine. In order to insure perfect regularity of suction in the pumps, an immense iron fly wheel, fifteen feet in diameter, weighing over ten tons, provides for steady action of the machinery. The pumping station is two stories high and is 80 feet long by 35 wide.

The cross lake boat lines have been forced to refuse all freight in the line of grain and grain products, on account of a shortage of freight cars on the east side of Lake Michigan. Since the lake and rail and wild boats have been discharging all their full cargoes of grain at Buffalo there has been a tremendous demand for freight cars in that part of the country. As a result all Michigan & Western cars which have gone to New York are being used by the down east railway lines, causing a famine in Michigan. There are still enough cars in the middle west to take care of the class freight, but the flour trade can secure practically nothing to carry its product east. The warehouses on both sides of the lake are filled with flour and other grain products. While other business is good the boat lines have hardly enough to keep their boats busy in the class freight carrying. The Pere Marquette for instance, has three boats, the F. & P. M. Nos. 2, 3 and 4, available for service, but only two of these are running. The warehouses are so filled on the other side of the lake that there is room for no more flour. After a time, when the Buffalo grain has nearly all been moved, the demands of the Michigan railway lines that their cars be sent back to them will be met, and there will be some lively shipping on the other side of the lake which will probably be paralysed by the lake lines.

Capt. James Davidson, of West Bay City, has sold two wooden steamers to Sayers & Hoyt, vessel owners, of San Francisco. One of the vessels is the Bermuda and the other is the steamer built at the Davidson yard during the past summer, but which was not finished in time to go into the lake service. She has not yet been named. Both these steamers will take partial loads of grain or flour from Chicago in the spring for Montreal. Then they will take lumber to New York, and from New York they will load general merchandise for San Francisco. The vessel that has not yet been in commission is of full Canadian canal dimensions and will, therefore, carry about 3,000 net tons on deep draught. She has triple expansion engines, modern steam auxiliary machinery, electric light plant, etc., and it is understood that her new owners are planning on having her engage in trans-Pacific trade. The Bermuda is a smaller vessel and has only compound engines. She will engage in Pacific coasting trade. S. F. Hodge & Co. are to install surface condensers and otherwise fit the two steamers for their de-



parture to salt water in the spring. Capt. Davidson says he has not yet made up his mind as to what he will do regarding the construction of wooden vessels at his West Bay City yard during the winter. He is not enthusiastic over the outlook for another year or two. "I notice," he says, "that although the consolidated shipyards are full of vessels under construction for next year, none of them are for the big industrial organizations that have iron ore to move. They are all for the individual owners who control no ore. Probably it would be as well for some of us to go slow for awhile."

#### DULUTH-SUPERIOR.

*Special Correspondence to The Marine Record.*

A warranty deed dated January 23, 1900, was filed with the register of deeds at Duluth Thursday, by which the Sheridan Mining Co. conveys to David B. Oliver the southeast quarter of the northeast quarter of section 3-57-21, for a consideration of \$225,000.

An unconfirmed report regarding next year's plans of the Northern Steamship Co., of which James J. Hill is president, has reached Duluth. It is that the big passenger boats, North West and North Land will run between Chicago and Buffalo instead of Duluth and Buffalo. The prospective travel to the Exposition at Buffalo is said to inspire the change.

It is probable that the date of fixing the price at which next year's ores are to be sold will be much later than has been expected. A recent report, which was sent out from Pittsburgh, was to the effect that the date had been fixed for January 25, but this is not generally credited. The Ore Association embraces iron ore producers, whose residences are in Cleveland, and these men have hardly made any move along the lines necessary to be pursued when such a meeting is to be called. The general ground must be gone over and the analysis made.

The annual report just issued by Deputy Port Collector Mills for the Port of Superior is the most satisfactory of any year in its history, showing a large proportionate increase in total arrivals and clearances, total tonnage and value. Notwithstanding the coal strike in the east, which cut off a large number of boats for a considerable period in the midst of the shipping season, the arrivals during the past year exceeded those of last season by 438, and the tonnage was 155,310 tons more than a year ago. The value of the tonnage of the season just closed was \$86,471,407.80, while a year ago it was \$82,275,323.05. The total freight in and out was 5,139,240 tons. But the most significant showing of the report is when compared with the annual report of the "Soo," which shows an increase of 337,236 tons. The local report shows that 301,000 tons of that increase may be credited to the port of Superior. These figures will be made use of by the Representatives in Congress in their efforts to have Superior made at least a port of delivery, as provided for by a bill now pending for the setting off of the State of Wisconsin from Michigan, with Superior in the Milwaukee district.

The Secretary of the State Railroad Commission served the expected notice of a reduction in ore rates on the Duluth, Missabe & Northern and the Duluth & Iron Range roads, roughly figured, with a business of the ore roads for 1900 as a basis, the reductions would cut off \$1,577,000 of the earnings of the three ore carrying roads of Minnesota. While the commission does not act in the case of the Eastern Minnesota the result will be the same, as the rate on one ore road would fix it upon another. The commission fails to order a reduction on the Eastern Minnesota because that line is an interstate one and consequently the State commission has no authority. The same schedule of ore rates for the Missabe and Iron Range are: Reduction from 80 to 60 cents a ton from all points on the Missabe road; from \$1 a ton to 80 cents on the Duluth & Iron Range from Ely; from 90 to 70 cents from Tower and from 80 to 60 cents from all Mesaba range points on this road. The Duluth & Iron Range road under the reduction, and on a basis of this year's ore business, would suffer a loss of about \$715,000. Figuring in the same manner the Missabe's loss would be about \$622,000, and the Eastern would come in for a reduction of about \$240,000, making a grand total of \$1,577,000. The railroad commission finds no fault with the miscellaneous rates of the Duluth & Iron Range and Missabe roads, but in the case of the former it is required that the logging, lumber and shingle rates, which were canceled Dec. 1, be restored. The Iron Range has heretofore held that it has no logging rates, and made none except under special contract. While the railroad commission has put in a new schedule of ore rates it is generally understood that the fight has just begun. The two roads upon which the reductions have been ordered have thirty days in which to appeal, ask for a reopening of the case, for injunctions, or whatever course they may decide to pursue. The present commission will go out of existence Jan. 6, and the newly elected commissioners will assume the duties. The benefits that might accrue to anybody by the reduction of ore rates is a question that has excited much discussion. It is claimed by the roads that any reductions that might be made would immediately be met by a demand from the furnacemen for a corresponding reduction in the price of ore. It is asserted that this argument has never been successfully overcome.

At Chicago the steamer City of London is receiving repairs, the steamer John Spry new deck beams and deck, and the schooner Cora a new deck and hatch coamings.

#### CLEVELAND.

*Special Correspondence to The Marine Record.*

The Cleveland employes of the Detroit & Cleveland Navigation Co. presented General Agent D. C. McIntyre with a beautiful black buffalo robe.

At the annual meeting of the Cleveland lodge of the Licensed Tugmen's Protective Association, held Friday night, the following officers were elected: President, Michael McDonough; vice president, P. A. Johnson; treasurer, Edward Kemmett; financial secretary, Clarence Pomeroy; corresponding secretary, W. T. Suft; recording secretary, M. J. Burns.

A government school ship on the lakes will soon be a reality if the large lake cities ask for it. Their size and importance clearly entitle them to it and the favor of the Secretary of the Navy, the Secretary of State and Senator Hanna has already been solicited and obtained. The government can be induced to provide the vessel, maintain it and furnish the officers and men. All that is needed is to demonstrate to the government that the lake cities want it and will use it. Very little effort ought to suffice to arouse their interest in the matter—not much more than is needed to direct their attention to it.

The plant of the Brown Hoisting & Conveying Machine Company, one of Cleveland's largest industries, was practically destroyed by fire last week. A thousand men were thrown out of employment, and the property loss may reach large figures. The fire began in the building at the west end of the plant, occupied by Ellwell-Parker Electric Co., a branch of the Brown Co. The electric company's building was soon destroyed. The big three-story office building on the east caught fire and the place was gutted. The big main building in the rear of the office was the next to feed the flames. The company is known all over the world for its hoisting machinery. At present it has big contracts in European countries, and the work of reconstructing the plant is being carried on day and night by the largest force available.

The following is from the Detroit Journal: A Washington dispatch, stating that the bill to provide for an additional United States district judge in Cleveland had passed the Senate, and that Harvey D. Goulder would probably be appointed to the position, was an agreeable bit of news to local admiralty lawyers. "Mr. Goulder is one of the best equipped lawyers in the country," said Wm. B. Cady, of Shaw & Cady. "No selection could be more popular. I presume that Mr. Goulder is among the best informed admiralty lawyers in America. He has been attorney for the Lake Carriers' Association since its organization, and eminently successful as a fighting lawyer." George L. Canfield, another prominent admiralty attorney, stated that Mr. Goulder was a logical candidate, and that his appointment would be agreeable to every attorney who knows him. Mr. Canfield does not believe, however, that Mr. Goulder will accept. "Mr. Goulder is a hard worker," said Mr. Canfield, "and I doubt if he would be willing to sacrifice his life to the absolute retirement from active practice which such an appointment would bring."

#### FLOTSAM JETSAM AND LAGAN.

The steamer Oceanica was docked at Milwaukee last week to have a leak stopped.

According to reports received from Milwaukee the elevators at that port are fast filling up.

The first annual meeting of the Milwaukee lodge of the Shipmasters' Association was held this week.

The armor plates for the Russian battleships Alexander III, Orel, Borodina and Knaz Suvaroff, amounting to about 10,000 tons, will be manufactured in this country at the plant of the Bethlehem Steel Company, South Bethlehem, Pa.

The local inspectors of steam vessels, at Toledo, have suspended the license of S. H. Walla, who had charge of the steamer Denver at the time she ran into and sunk the steamer Specular, in Pelee Passage, Lake Erie, for a period of six months.

The United States auxiliary cruiser Yosemite, which was formerly the Morgan line steamer El Sud, parted her cables off the harbor of San Luis Apia, Island of Guam, on Nov. 15, and, drifting on a reef 60 miles down the coast, was wrecked. All but five of the crew were saved. The disaster was caused by a typhoon.

The keel for the new cup defender which is being built under the supervision of the New York Yacht Club at Bristol, R. I., has been laid, and work will progress rapidly from now on. It is stated that the bronze hull plates above the water line will be left in their polished state instead of being painted as was the case of the Columbia.

At the yards of the Chicago Ship Building Co., One Hundred and First street and the Calumet river, the steamer Northwestern will be launched next Saturday afternoon at 3 o'clock. The craft is for lake and ocean service. She is 242 feet keel, 256 feet over all, 42 feet beam, depth of hold, 26 feet. Drawing 15 feet of water this craft will carry 2,600 tons of freight.

It is rumored that the Sault Ste. Marie Ferry Co. intends building a new ferry during the winter. It will probably be built in Canada. The increase in traffic between the two Soos necessitates much quicker service than heretofore. The two boats should enable the company to make about ten-minute trips. It is hoped that the new boats will be

built, so that teams can be driven on and off and enable the citizens of either Soo to drive on the opposite side of the river.

The hopes of the marine men of Manitowoc and vicinity are to be realized by the equipment of a marine hospital. Dr. A. C. Frazier received notice from Secretary Gage that he had been appointed acting assistant surgeon in the marine hospital service. This insures, also, the designation of Holy Family Hospital as one of the United States stations in this department. The appointment was accompanied by a circular letter signed by Walter Wyman, supervising marine surgeon, stationed at Washington, which gives a general outline of the official duties and extent of the hospital service.

Manitowoc's winter fleet, outside of the Goodrich liners and small schooners owned at that port, will consist of the steamers Waverly, Columbia, City of Naples, Hiawatha, Manhattan, City of Rome, A. P. Wright, Massachusetts, John Craig, Merrimac, Nyanza, Alva, Maurice B. Grover, Hesper, Rufus P. Ranney, Andrew Carnegie, Charlemagne Tower, Jr., W. B. Morley, H. S. Pickands, F. E. Spinner, Fedora, Thomas Maytham and A. Folsom; barges F. A. Georger, Yukon, David Z. Norton, May Richards, Aurora, Mary Mitchell and S. M. Stephenson. The large tugs Niagara, Sampson, Rival and Queen are also included in the fleet.

Congressman Corliss, of Detroit, will introduce a bill looking toward the raising of the levels of the Great Lakes. The bill will provide for an appropriation for a dam above the falls in the Niagara river. During the last session Senator Platt, of New York, introduced a similar bill and it is probable that Congress will take some action at this session on the subject. Owing to the Chicago drainage canal and other like projects the lakes have been seriously affected and legislation is needed. Representative Corliss' bill will call for a survey in order to estimate the cost and also provide for an international commission to consider the question of lake levels.

A vessel manager states that unless there are some changes made in the cost and methods of handling lumber the average lumber carrier will have to go out of business, unless much better carrying charges than are expected are paid next season. During the latter part of the season just closed, he said that one of his vessels took on 650,000 feet of first-class lumber at Alpena for Toledo, and she made the round trip in less than a week. The rate was \$1.50, and when the trip was completed the vessel was \$60 in debt. The owner said that he would take the matter up with vessel owners engaged in the lumber carrying trade at the upper lake ports and arrange for a meeting to be held at Detroit following the annual meeting of the Lake Carriers' Association.

The event of the week in coast yachting circles was the positive announcement by Thos. W. Lawson, of Boston, Mass., owner of the steam yacht Dreamer, that he would build a defender of the America's cup, and that the new boat would compete with the craft which the New York Yacht Club would have constructed to meet the new British-built Lipton yacht. Nothing but words of praise for Mr. Lawson's patriotic move is heard among yachtsmen and others, and the contest between the Herreshoff boat and the one which will be built by the Bostonian will create almost as much excitement as the cup races themselves. The boat will be built by the Fore River Engine Works at Quincy Point, Mass., and Frank O. Wellington says he can build the hull in ten weeks from the time he received the plans.

A dispatch from Duluth says that Capt. B. B. Inman, of that city, has gone to Montreal, where he will explain before the Chamber of Commerce of that city his proposed ice crushing boat. Capt. Inman claims that with this craft it will be possible to keep navigation open on the Great Lakes the year around. A company was formed some time ago by New York, Detroit, and Ottawa capitalists for the purpose of building boats of this description, and \$1,000,000 was subscribed for that purpose, but the great advance in price of material caused the abandonment of the enterprise. The proposed boats are each to be some 500 feet long and will not be simply ice breakers. They will be constructed of iron, at a slight advance over the ordinary cost of similar sized craft, and will be able to also do a general passenger and freight transportation business.

The project on at Washington to have the city of Chicago transfer to the National Government the drainage canal with a view to having a deep waterway constructed through to the Gulf, using the Mississippi, is considered in marine circles as nothing more than a dream. Chicago has foisted upon the government the Chicago river, through the shrewdness of some of her politicians, thus freeing that city of the dredging expenses, and it is not taken as surprising that the same thing should be done with the drainage canal, but that it will ever be a successful deep waterway to the Gulf is seriously doubted. The main reason for all this is that vessel property available for lake service is too valuable to be allowed to lumber along at canal rates of speed, as would be necessary in the small channel of the drainage canal or the Mississippi. Neither the marine men nor the engineers doubt that the canal could be built, were they so disposed, but the vessel owners, who are to be counted in on such a project, declare that the rates demanded for such slow transport would be too high to compete with the railroads, and if they should compete in the only way possible, by cutting down the rates, the business would be ruinous to the vessel owner, seeing the possibilities of lake navigation as developed in the last few years.



# THE STEAM TURBINE, THE STEAM ENGINE OF MAXIMUM SIMPLICITY AND HIGHEST THERMAL EFFICIENCY.

BY ROBERT H. THURSTON, MEMBER AMERICAN SOCIETY OF MECHANICAL ENGINEERS.

Prof. Thurston states that while the ideal thermodynamic machine has not been constructed, and probably never will be, the close of the nineteenth century sees a remarkably close approximation to the ideal machine. The ideal construction is certainly reached in a machine in which there exists but a single moving element and the ideal thermodynamic machine is approximated in a motor in which a dyabatic expansion is secured, and friction and heat waste may be made sources of comparatively small loss. The elements of waste, conduction and radiation, and incomplete expansion, are probably capable of large reduction, with improved construction and continued experience in the apportionment of the apparatus to its work. The main purpose of this discussion is to summarize the work of the steam turbine to date, bringing out into relief facts indicating the essential importance of employing superheated steam in a machine in which it has seemingly no other than thermodynamic value, and of the use of condensation to enable the engineer to evade a loss and accomplish a purpose which have no counterparts in the case of the piston engine. Prof. Thurston presents the following conclusions: 1. The steam turbine thermodynamically approximates in its real form more closely to the ideal than does any other type of heat motor. Its cycle lacks only the introduction of the Carnot compression. 2. It is entirely free from that waste, which in the real steam engine of common type constitutes usually, if not invariably, the most important of its extra thermodynamic losses. 3. It is peculiarly well fitted for use with those very high steam pressures as we now regard them, which must ultimately probably be resorted to by the engineer designing heat engines in his endeavor to further improve the efficiency of that class of motors. 4. It is only limited in speed of rotation by the strength of its materials of construction. 5. It is especially suitable for use with superheated steam, it having no rubbing parts on which lubrication may be difficult, in presence of superheated steam, and the limit to the superheat, so far as the motor is concerned, being only found at that point at which increased temperature of metal produces reduction of tenacity in objectionable amount. That limit, not as in earlier days of lubrication with animal oils, and still with other engines, is fixed with this machine at the boiler. 6. As to its operation, it is obvious that friction is peculiarly active for evil in this motor, and that small diameters of journal, freedom from contact of part with part, except as absolutely required by the construction, and minimizing fluid friction by superheating steam, and by securing as complete removal of the atmosphere, air or vapor from about the revolving wheel as practicable, must be carefully sought in order that the mechanical efficiency of the machine shall be made a maximum. 7. The wastes of the steam turbine are all extra thermodynamic; the loss due, the absence of adiabatic re-compression excepted. They consist of journal friction, which is made minimum by the use of a flooded bearing and a light unguent; fluid friction between disk and leakage steam, or suspended moisture in the jet, which may be made a minimum by superheating, and between the disk and its enclosing atmosphere of vapor, which may be minimized by the employment of a good condenser; loss of heat and steam by leakage, which may be reduced to a minimum by durable material, fine workmanship and close fits; waste by incomplete expansion, which may be reduced to a limit determined by the finance of the case, by the resultant increase of friction and of cost due the necessary enlargement of the turbine; and, finally, thermodynamic waste by failure to secure that complete adiabatic re-compression of the fluid which is necessary to convert the Rankine-Clausius' into that of Carnot. The latter is a peculiarly difficult matter with the steam turbine, since it probably necessarily involves the employment of a separate vapor compression pump of special character, and an amount of added work and cost which may introduce losses more than compensating its gains.

THE vessels built in the United States and officially numbered from June to November this year, were 495, of 149,963 gross tons. The principal items of the total are seven steel steamships on the Great Lakes (34,933 gross tons) and four smaller steel steamships (8,456 gross tons), which would pass through the new Welland canal, and one steel schooner barge (2,790 tons).

## HYDRAULIC DREDGERS.

Four big dredges, constructed on a system devised by L. W. Bates, of Chicago, have been built in Great Britain according to the Inventive Age, for service in various parts of the world. The first left the Tyne in May last for India, and another left a few weeks ago for Australia. The third and largest of all, the Hercules, has made its trial trip with satisfaction to builders and buyers. The Hercules internally, has a most ingenious arrangement of mechanism and devices for dredging purposes. There are two large suction pipes in the forward part of the vessel, passing through the bottom of the ship. These pipes can be lowered or raised at will, and with perfect ease. On the end of each of these there is fixed a rotary vertical cutter, for cutting into and loosening the sand or whatever material upon which the dredger may be at work. These cutters are operated each by a 250 horse-power compound engine, and as they loosen the sand or mud, it is drawn into the suction pipes by a powerful centrifugal pump, driven by an engine of 1500 horse-power. After being sucked up in this fashion the dredged material passes through a pipe running the length of the ship, and is discharged from a pipe projecting from the stern. By this means, and by the attachment of different lengths of pipe, connected by patent joints and floated on pontoon, which may be deflected by utilizing the discharge of water, it may be thrown to a considerable distance on either side of the channel dredged. There is, however, an alternative arrangement by which the material can be deposited to a distance of 4,000 feet from the dredgers. The anchor spuds—huge bulks of timber 60 feet long and 24 inches square, two at the stern and one at the bow, passing down through the hull of the ship, constitute no unimportant part of the gear, for these may be used to hold or pivot the dredgers when the cutters are in motion. On the port side of the Hercules, there is fitted what is termed a "side trailer." This is also used for dredging and can be operated either in connection with the cutters or by itself. The side trailer has no cutter device and acts entirely by suction, promoted by the centrifugal pump, by which it is connected. It disposes of the sludge through the same medium as the bow suckers—that is, through the discharge pipe at the stern. The capacity of one of the smaller dredges of the four is from 300 to 1,000 cubic yards per hour.

## TRAFFIC THROUGH THE ST. MARY'S FALLS CANAL.

STATISTICAL REPORT OF LAKE COMMERCE THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE MONTH OF DECEMBER, 1900.

### EAST BOUND.

Articles.	U. S. Canal.	Canadian Canal.	Total.
Copper.....net tons	2,221	.....	2,221
Grain.....bushels	1,368,710	.....	1,368,710
Building stone.....net tons	2,250	.....	2,250
Flour.....barrels	304,417	900	305,317
Iron ore.....net tons	133,065	.....	133,065
Iron, pig.....net tons	.....	.....	.....
Lumber.....M. ft. B. M.	12,679	162	12,841
Silver ore.....net tons	.....	.....	.....
Wheat.....bushels	1,918,104	442,900	2,361,004
General mdse.....net tons	1,586	1,390	2,976
Passengers.....number	42	323	365

### WEST BOUND.

Coal, hard.....net tons	20,339	.....	20,339
Coal, soft.....net tons	40,940	.....	40,940
Flour.....barrels	.....	90	90
Grain.....bushels	.....	.....	.....
Manufactured iron.....net tons	2,075	25	2,100
Salt.....barrels	600	.....	600
General mdse.....net tons	6,858	1,587	8,445
Passengers.....number	.....	82	82
Freight—			
East bound.....net tons	285,513	15,098	300,611
West bound.....net tons	70,302	1,622	71,924
Total freight.....net tons	355,815	16,720	372,535
Vessel passages—			
Number.....	225	80	305
Reg'd tonnage.....net tons	235,319	18,562	253,881

Compiled at St. Mary's Falls canal, Michigan, under direction of Lieut.-Col. G. J. Lydecker, Corps of Engineers, U. S. A. Joseph Ripley, Asst. Engr. and Gen'l. Supt.

## STATISTICAL REPORT OF LAKE COMMERCE THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE SEASON OF 1900.

### EASTBOUND.

Articles.	U. S. Canal.	Canadian Canal.	Total.
Copper.....net tons	126,671	4,395	131,066
Grain.....bushels	15,042,161	1,022,064	16,064,225
Building stone.....net tons	43,912	4,990	48,902
Flour.....barrels	6,123,246	631,630	6,754,876
Iron ore.....net tons	15,439,617	1,003,951	16,443,568
Iron, pig.....net tons	19,985	90	20,075
Lumber.....M. ft. B. M.	898,093	11,558	909,651
Silver ore.....net tons	110	.....	110
Wheat.....bushels	31,325,693	9,163,609	40,489,302
Gen'l mdse.....net tons	65,875	20,458	86,333
Passengers.....number	16,965	12,233	29,198

### WESTBOUND.

Coal, hard.....net tons	476,131	39,384	515,515
Coal, soft.....net tons	3,488,558	482,904	3,971,462
Flour.....barrels	212	5,600	5,812
Grain.....bushels	26,084	84,350	110,434
Manuf'd iron.....net tons	97,101	18,409	115,510
Salt.....barrels	318,358	10,537	328,895
Gen'l mdse.....net tons	394,885	60,179	455,064
Passengers.....number	19,348	10,009	29,357

Freight—			
East bound.....net tons	19,102,494	1,429,999	20,532,493
West bound.....net tons	4,504,860	605,720	5,110,580

Total freight.....net tons	23,607,354	2,035,719	25,643,073
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Vessel passages.....number	16,369	3,083	19,452
Reg'd tonnage.....net tons	20,136,782	2,179,052	22,315,834

NOTE.—In addition to the above traffic, 15,500 cords pulp wood and 8,500,000 feet pine logs passed over the rapids, bound for lower lake ports.

Compiled at St. Mary's Falls Canal, Michigan, under direction of Lt. Colonel G. J. Lydecker, Corps of Engineers, U. S. A.

JOSEPH RIPLEY,  
Asst. Engr and Gen'l Supt.

## COMPARATIVE STATEMENT OF LAKE COMMERCE THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE SEASONS OF 1899 AND 1900.

ITEMS.	SEASONS.		Increase Per Cent	Decrease Per Cent
	1899	1900		
Vessels:				
Steamers, Number.....	14,378	14,426	0	...
Sails, Number.....	4,776	4,004	...	16
Unregistered, Number..	1,101	1,022	...	7
Passengers, Number.....	20,255	19,452	...	4
Tonnage:				
Registered, Net Tons...	21,958,347	22,315,834	2	...
Freight, Net Tons.....	25,255,810	25,643,073	2	...
Passengers, Number.....	49,082	58,555	19	...
Coal:				
Hard, Net Tons.....	841,281	515,515	...	39
Soft, Net Tons.....	3,099,606	3,971,462	28	...
Flour, Barrels.....	7,114,147	6,76,688	...	5
Wheat, Bushels.....	58,397,335	40,489,302	...	31
Grain (other than wheat) Bus.	30,000,935	16,174,659	...	46
M'd. & Pig Iron, Net Tons	214,585	135,585	...	37
Salt, Barrels.....	316,336	328,895	4	...
Copper, Net Tons.....	120,090	131,066	9	...
Iron Ore, Net Tons.....	15,328,240	16,443,568	7	...
Lumber, M. ft. B. M.....	1,038,057	909,651	...	12
Silver Ore, Net Tons.....	487	110	...	77
Building Stone, Net Tons...	39,063	48,902	25	...
General Merchandise.....	587,484	541,397	...	8

The United States canal was opened April 19 and closed December 12, 1900; season, 238 days.

The Canadian canal was opened April 23 and closed December 16, 1900; season, 238 days.

Compiled at St. Mary's Falls Canal, Mich., under direction of Lt. Colonel G. J. Lydecker, Corps of Engineers, U. S. A. JOSEPH RIPLEY, Asst. Engr. and Gen'l. Supt.

THE H. W. Johns Manufacturing Co. are at work on the new twenty-story Broad-Exchange building, corner of Broad street and Exchange Place, New York, applying their asbestos covering. We understand that the Riser pipes alone require over 40,000 feet of covering, and that when the pipes are all covered there will be put on between 50,000 and 60,000 feet. This is one of the largest buildings recently erected in that section of the city. The H. W. Johns Manufacturing Co. have a very complete illustrated list of their various asbestos coverings, which they will be pleased to mail upon application.



## LETTERS AT DETROIT MARINE POST OFFICE.

December 19, 1900.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Campbell M. A., Bielman  
Christian Thos., 2, Huron  
Crothers Jas., 2, Erickson  
Carlson T. J. R., Egan  
Culver C. B., Fedora  
Cash Fred E., Gilchrist  
Cronck Wm., Grecian  
Cowan Fred., 2, N. Mills  
Crowell Wm., Magnetic  
Caulkett W., 2, Mingoe  
Cramer Bertha, Normandie  
Connell H. S., "  
Connell R. J., "  
Campbell W. J., Nicol  
Cowhey Andrew, Calayuga  
Cook Edward, Aurania  
Cook Wm., Light Guard  
Campbell G. L.-2, Marina  
Curry Ross, Pickens  
Cavanaugh Jas., Phoenix  
Corbett Jas., Presque Isle  
Conley Geo. B., Republic  
Cary, F. G.-2, Queen City  
Clancy John B., Pentland  
Craig Albert, Oglebay  
Connoley Peter, Vance  
Collins Austin, Manchester  
Craigie Jas., Ionia  
Canarney Capt. M., Zillah  
Chapman Milford, Stewart  
Cassin Jas. J.  
Christopherson Olaf, Meade  
Dapp August, Hayward  
Duby Emma "  
Donnelly, E. J., Mahoning  
Duncanson Jos., Onoka  
Davern Patrick, Oliver  
Davidson R. A., Olverwaite  
Datsch Lester, Oscoda  
Davis J. H., Savona  
Davy Oliver, Ralph  
Dunn John, A. A. Parker  
Deagon Mrs. Harry, Linn  
Divele Geo., Lindsay  
Dixson, John Mr., Lansing  
DeMont G. A., Caliyuga  
Dundas W., Normandie  
Dien John, Mont Blanc  
Doner Hugh, Maida  
Durkee Wm. Grecian  
Davis O. E., Ford  
DeGuise Alfred, Harvard  
Donovan J. E., J. E. Hall  
Dodge Fred, Huron City  
Deering Kate, 2, Bloom  
Denne Wm., Black Diamond  
Drake T. J., Averill  
Drake Alfred, Fulcan  
Dulmage Claude, Danforth  
Davidson And., Chippewa  
Denner J. H.-3, Coralia  
Duckett Albert, "  
Eustis A. W.-3 "  
Ellis F. S., Wawatam  
Eagan F. L., Wolvin  
Eastcott Jack, Black  
Emlaw Louis  
Ellis W. T., Spokane  
Edson Capt. John, Mary  
Elsie A. C., Miami  
Eacker Geo. P., Minneapolis  
Eveland Harry, Saginaw  
Ellis Reuben, Oregon  
Edwards J. W., Rose  
Edmunds Gilbert  
Earle Wm., Roebling  
Froggoss Napoleon, Fryer  
Fry Walter, 2, Carnegie  
Folkerts Geo.  
Fuller Roy  
Fox Ben, Zillah  
Foster David, Aztec  
Frederick Chas., Arizona  
Fense Robt, Black  
Fritz W. J., Hanna  
Fitzsimmons Thos., Sel Eddy  
Fahey John, Erin  
Frogner J. B., M. B. Grover  
Fournie Robt., Minnesota  
Ferguson, A. C.-2, Nimick  
Francombe C. J. Nipigon  
Ferguson Wm. L., Linn  
Fay W. H.-2, Magua  
Finlayson D.-3, Ploughboy  
Ferguson John, Republic  
Flood Geo., Sanilac  
Freer C. E., Stephenson  
Ferguson Duncan, Poe  
Gallerno Jas.-2, Pawnee  
Glass E. H., Mystic Star  
Gonyau Jas.  
Gottfredson Victor, Chas.  
Gray John  
Gray John L., Lafayette  
Gilchrist L. J.  
Giddings E. H., J. B. Wilbur  
Gallino Capt. A. P., Pringle  
Gell Howard, Huron City  
Garner A. D., Tampa  
Garber H. A., Oregon  
Gunn C. B., Poe  
Geiger Ernst, Superior City  
Gaskin R. A., Shenandoah  
Grant S. M., Queen City  
Gilligan W. J.-2, A. A. Parker  
Goa Ella, Laura  
Gaudin John B., J. B. Ketch-  
Gullett, Mrs. H., Niagara [am  
Gollogy John, Nicol  
Gassan Peter, J. J. McWil-  
liams  
Gampp Albert, McLachlan  
Gregg John, O. Mitchell  
Gross Otto W., Matoa  
Grose Edw., "  
Green, A. L., Marcia  
Gilkinson T. J., Garden City  
Gibson Jas., Grecian  
Greeman R. W., R. Emily  
Guy Otto, Hannah  
Gumlich Chas.-2, Harper  
Grant John, Huron  
Glass Joe-2 Black Rock.  
Graham Norman, Adriatic  
Gilroy Lee, Wade  
Gibbons Frances, Uranus  
Glennie Geo. D., Devereaux  
Gonyou Emery, Darley  
Hanna Wm., Tuttle  
Heams Capt. C. W.-3, Sea Gull  
Howard F. M., Lafayette  
Hansen Christ, Frontenac  
Harmon Frank  
Hunter Ed  
Harry Hill, J. W. Westcott  
Henry H. A.  
Hamilton, Chas.  
Hayward Fred. H.  
Howard A. A., Fairbairn  
Harkins Richard  
Houghtley Wm., C. Campbell  
Henry Chas., Case  
Halley James, Castalia  
Hull Chas. T.-4, Colonial  
Huddleson Chas., Waldo  
Heinklemann Jas., Yuma  
Horton Amos, Aztec  
Hawkins, M. N.-3, Amazon  
Hollister L. E., Appomattox  
Hagerman Jno. H., Black  
Hareon Capt. J. P., Bloom  
Hinkley P. E.  
Hartford Jack, Wm. Case  
Hungerford DeWitt, Harper  
Harrington Wm., Helvetia  
Harris J. S., Holden  
Hurst Geo. M.  
Henderson A. A., Ericsson  
Hyslop David, Folsom  
Hide J. Arthur, Glidden  
Hyde H., Grandy  
Herbert David, Gettysburg  
Holmes C. J. Mont Eagle  
Harwood Mrs., Myles  
Harwood Jas., "  
Henderson Capt., Worden  
Hodgson A. P., North Wind  
Harris R. B., Newaygo  
Hudson, Capt. Jas., Normand  
Hintze Fred, Aurania  
Hoskin Jno. E., Leland  
Howard F. M., Lafayette  
Hill Capt., Manila  
Hasty Wm., Rust  
Hamburg Norman, Roby  
Lucas Arthur, Wawatam  
Lawson, Capt. Iva, Lawson  
Large Robt. K.-3, Yuma  
Lapham Guy  
Laurence Edw., Advance  
Leitch Jas., Aztec  
Lumby Geo. W., Hackett  
Laurent Ed. Iscoq  
Langlois Louis, Iron Age  
Leckie Fred, Ericsson  
La Montague Jos., Gould  
Lawr, C. W., Marcia  
Lee Wm., Michigan  
Lonaway, J. S., Minneapolis  
Laith Wm., Magnetic  
L'Hote Harry, V. H. Ketcham  
Lang Julius, Phoenix  
Lowe Wm., Wyoming  
Light F. W., Rennsler  
Lyon P. W., Strathcona  
Lowrie Robt., Seattle  
Leaf John, Oregon  
Lee Matilde, Pretoria  
Lembke August, City of Genoa  
Lafleur Aimie, Wall  
Lock H. G., Tokio  
Lee Fred.-2  
Lane Dawson, Cumberland  
McKay M., Juniata  
McKay John, Progress.  
McQueen Ginley, Nichol  
McDonald Sid B., Renssler  
McDonald D., Presque Isle  
McKenny J., A. A. Parker  
McDougall T. A.-2, Pratt  
McMath Sam'l., Polenasia  
McCallum W. G., Herschel  
McCallum Geo. W., Marina  
McCallum Peter, Helena  
McKechnie Allen, 2, Manola  
McFarland John, Michigan  
McLeod Duncan, J. B. Ketch-  
am  
McQueer, Jas., Smith No. 1  
McConnell Jas., Hesper  
McGregor Adam, Penobscott  
McKenzie Geo. T., Pringle  
McLeod Neil, G. Stevenson  
McQueen Stanley, Sarnia  
McKenzie Duncan, Santa  
McConnell Alfred [Marie  
McDonald Johnnie, Minnesota  
McAndrew, Mrs. J. H., Merri-  
mac  
McKinnow Ronald, Minnea-  
polis  
McLoughlin Nicol, Malta  
McKibb Thos., Grampian  
Mackerrall Edw. B., Sagamore  
McRae Alexander, InterOcean  
McAleer Mary, Barlum  
McManus Patrick, Atmosphere  
McDonald Wm., Buckout  
McFarlane Wesley, Berlin  
MacNeil J. A., Argonaut  
McPhail Gilbert, Yuma  
McIntosh Jas., Danforth  
McLaughlin Frank, W. D.  
Reese  
McEvoy Jas. J., R. Richards  
McLain J. R. B., Strathcona  
McDonald W. J., Lafayette  
MacGillivray A. W., Gilbert  
Morton Edw. C., W. D. Reese  
Moehan Josephine, Shenan-  
doah  
Miller Capt. C. D., E. Smith  
Martin Mrs. Mary Ann  
Murphy John, Colonial  
Meyers Frank, Uranus  
Manning Martin, R. Wallace  
Mullen Bartley, Wade  
Morris Jno, Advance  
Mattison D. W., Aztec  
Murray John, Angeline  
Miley Harry, Amboy  
Maloney Jas., Buell  
McGuire Wm., G. Campbell  
Milton Chas., Harvard  
Milliken, E. P.-3, Filer  
Murphy Jno., Gettysburg  
Miller W. F.-2, Maruba  
Morse Mrs. E. C., R. Martini  
Manhard Omer, Morley  
Mann Melvin, Madagascar  
Mast Geo., Neshoto  
Marintette Olezieme, Sicken  
Maitland W. R., Shrigley  
Morrison Alexander-2, Street  
Milliken W. J., Saxon  
May Dan-2, Paisley  
Mullane J. F., Peshtigo  
Mitchell Martin, City of Genoa  
Miller Mrs. M. J.-3, Sweet-  
heart  
Maher John, Sachem  
Montgomery, Bert.-2, E. Kelly  
Monroe Donald, F. Kelly  
Murphy Will, Lafayette  
Vinton John  
Moore J. A. Locke  
Moar Thos., Naples  
Murphy Jos.  
McQuiny Mrs. W., Alva  
Moore Jerry, Jeanette  
Moore Capt. Richard, Jeanette  
Milne Robt. Livingstone  
Murray Hugh, Penobscott  
Merrell Oren, Plankinton  
Maher Michael, Phenix  
Mullen John-2, Reginald  
Milne John  
Miner Capt. Geo. Rensselaer  
Manson Walter, Ramapo  
Murray Angus, Norton  
McDonald Angus, Nicol  
Nye Jas. H.  
Newman Frank, Huron  
Norcross J. J., G. Stephenson  
Nesbitt Chas. K., L. Smith  
Nelson A. H., Maruba  
Norman Wm., Harlem  
Neill, D. C., Volunteer  
Olsen Chas. E.  
Oatt Frank S., Sevona  
Orr W. S., Santa Marie  
Owen Ernest-2, Aurania  
Oldoff A., Vega.  
Oliver Frank-2, Eureka  
Pitts Oliver-2, Kearsarge  
Patterson A. E., Hackett  
Possee Wm., Oronoko  
Plymouth Barge  
Pierson L.-2, La Salle  
Peerie Arthur, Keith  
Payne J. A., Newaygo  
Pomeroy Geo., Murphy  
Porter Charlie, N. Mills  
Paulsen Gus, Morley  
Pease Albert  
Pearson Capt. J., Fisk  
Patterson Cecil, Forest City  
Pink Ben, Harvard  
Pigott Roy, G. Campbell  
Peck Louis, H. H. Brown  
Patterson Walter, Bulgaria  
Plumb H., Averill  
Potter Harry, Takaima  
Peterson Anthony-2, Curry  
McAndrew, Mrs. J. H., Merri-  
Pouget John, Cambria  
Plaine Maggie, Chattanooga  
Patterson Harold, C. Campbell  
Patterson H. A. "  
Quick W. H.  
Reid Wm. C., Spokane  
Reid Mrs. A. "  
Ruddle Wm. C., Strathcona  
Riggin John H., Presque Isle  
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Roland Robt., Ford  
Ragan Martin, Italia  
Raif Andrus-2, Hesper  
Rankin Arthur E.-2, Hesper  
Rehmer Fred-2, Hattie  
Roach Henry-2, Black  
Rivard Geo. A., Aurora  
Ritchie W. S., Devereaux  
Ryan Capt. Dan, Argo  
Smith Mrs. Alice, Gladstone  
Sparrow Dick,  
Spotts Harry, Fedora  
Spaulding H. W.-2, Iron Age  
Sherwood, N. L., Hiawatha  
Slocum John, Hesper  
Sanders Willard T., Champion  
Serels Capt. W. A.-2, Alva  
Shorkey Edw., Aztec  
Savage Mrs. Gusty, White Star  
Strong Wm. C., Wetmore  
Sloat John, Veronica  
Stringer Bert, Venice  
Stewart Chesley, Centurian  
Smith Alfred J.-2, Chili  
Smith A. W., Coralia  
Sanol J. Ben  
Smith Ed.-2, Norwalk  
Stufflebeam W. E., Corsica  
Shears Adolph, Runnels  
Smith W.  
Snyder J. F.-2, Gould  
Stern W. H.  
Simpson Mrs. Stella, Mar-  
quette  
Smith Roman-2, Lafayette  
Stalker Archie, Advance  
Smith J. H.-2, Quito  
Strong Capt. W. H., Strong  
Stearns Frank J., Poe  
Shwentek Frank, Ogema  
Simon Henry, Topeka  
Saunders G. B., Wolvin  
Sutton John, Sitka  
Smith Wm., Rappahanock  
Simington Andrew, Merrimac  
Stomler C. B., J. J. McWilliams  
Schleicher Otto "  
Stehle Michael "  
Scales Jos. A., Mohawk  
Schurter Geo., Nicaragua  
Sylvester Herbert-2, Kalaiyuga  
Sturdevant Fred C., Aurania  
Sauve Jos., Livingstone  
Smith Frank W.-2, Uganda  
Seiler Geo. P., Peshtigo  
Selvig R., Pathfinder  
Shea John E., Lafayette  
Shorman Frank, Fosett  
Turnbull W. W., Danforth  
Tilley E. W., Venezuela  
Templeton Fred, Hadley  
Trigh C. H., J. F. Eddy  
Talbot John, Eureka  
Trudo Capt. John, Ferguson  
Thompson Thos.-2, S. Mitchell  
Thiemer W. A.-2, J. W. Moore  
Trent Capt. F. W., Nester  
Thompson Roderick, F. Kelly  
Taylor George-2, Lockwood  
Thomson Arthur-2, "  
Trudo Jos., J. Owen  
Trudo Mrs. A. B., Twin Sisters  
Trondin Frank,  
Towle John A., R. Fulton  
Tolle Jack, R. Fulton  
Tardiff G. A.  
Vasbinder Aaron D.-2, Hill  
Voight J. A., Pawnee  
Van Toll Ralph, Pentland  
Van Horne Cora, G. G.  
Houghton  
Welch Mrs. Geo., City Genoa  
Willoughby Capt. W. J.-2, Tuttle  
Palmer  
Wilson Fred, Progress  
Watson R. G., R. A. Packer  
Williams Geo. W. Peshtigo  
Walker Walter H., Shenandoah  
Warner Clarence-2, Spokane  
Warner W. B., Spokane  
Wray John-2, Lillie Smith  
Weitzman Frank E., Roby  
Wilds Henry, Pope  
Woodford Capt. C. H., Lindsay  
Walder Levi, Lafayette  
Walsh Levi, Joliet  
Windover Alex., Negaunee  
Weaver P. Urban-3, Nimick  
Wellman D. M., Maine  
Wiener Fred, Mecosta  
Welsh Mrs. C., Glidden  
Wagner Joseph, Gates  
Warrie John, Iron King  
Wharry John, Iron King  
Ward Chas., Henepin  
Worthly L., Harold  
Walters Fred, H. H. Brown  
Wilson Wm., Barr  
Wilson Geo., Black  
Wilson Albert-2, Alcona  
Wood E. H.-2, Aztec  
Weaver White Wm., Yakima  
Wright Roland, A. P. Wright  
Warner Lewis, Wyoming  
Woodruff Elmer, Wolvin  
Wilson Wm., Venezuela  
Wilson Wm., Rockefeller  
Wallis Fred, Siemens  
Washburn John-2, Chisholm  
Winter Joe  
Warner Mrs. Stephen, Saranac  
Weitzel Geo. F., Lagonda  
Wilson Wm., Lafayette  
Young John-6, Hayward  
Yost Julius, G. Campbell  
Yates A., Siemens  
Yax Gilbert, Fassett  
Zink Wm., Wade  
Ziegenhagen Henry, T. W.  
Palmer

## SHIPPING AND MARINE JUDICIAL DECISIONS.

**Marine Insurance—Abandonment of Vessel—Liability of Underwriters for Services in Saving Vessel.**—An abandonment of a vessel to the insurers after her loss relates back to the time of the disaster, and the title becomes vested in the underwriters as of that date, and they are responsible for reasonable expenses incurred by the master after that date in an attempt to save the vessel, especially where they were represented at the place of disaster by an agent during a large part of the time the work is being done, and approved the action of the master. *Gilchrist et al. vs. Chicago Ins. Co. et al.*, 104 Fed. Rep. (U. S.) 566.

**Extent of Liability in Marine Insurance.**—In such case the underwriters become the owners by the abandonment, as of the date of the disaster, of the entire vessel, and not merely of the insured interest, each being a part owner in the proportion that his insurance bore to the entire insurance; and each is liable, under Act June 26, 1884 (23 Stat. 53, 57, c. 121, § 18), for the same proportion of the entire indebtedness incurred by the master for work done in the attempt to rescue the vessel. *Gilchrist et al. vs. Chicago Ins. Co. et al.*, 104 Fed. Rep. (U. S.) 566.

**Maritime Law—Injury of Seaman—Liability of Shipowner.**—A corporation which is the owner of a ship, and which has exercised due care in making her seaworthy for a voyage, in her equipment and supplies, and the selection of her officers and crew, cannot be held responsible for the proper performance of the details of navigation during the voyage, and is not liable for an injury received by a member of the crew through the negligence of an officer or another member leaving a hatchway open, the navigation of the ship during the voyage being a common undertaking, for which all the ship's company in their several stations are employed, and in respect of which they are regarded by the maritime law, as well as the common law, as fellow servants. *Olson vs. Oregon Coal & Navigation Co.*, 104 Fed. Rep. (U. S.) 574.

**Admiralty—Appeals—Questions Reviewable.**—Under section 11 of Act March 3, 1891, creating the circuit courts of appeals (26 Stat. 826, c. 517), which provides that "all provisions of law now in force regulating the methods and system of review through appeals or writs of error shall regulate the methods and system of appeals and writs of error provided for in this act in respect of the circuit court of appeals," an appeal in an admiralty cause, which by such act is taken to that court instead of to the circuit court, as formerly, is to be heard and determined under substantially the same rules and limitations that regulated the determination of admiralty appeals in the circuit courts prior to the passage of that act; and, under the settled rule, such an appeal vacates entirely the decree of the district court, and brings the cause up for trial de novo upon every issue raised by the pleadings, those determined by the district court in favor of the appellant as well as those determined against him. *Gilchrist et al. vs. Chicago Ins. Co. et al.*, 104 Fed. Rep. (U. S.) 566.





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regarded.

CLEVELAND, O., DECEMBER 27, 1900.

## CHICAGO DRAINAGE CANAL.

In the Circuit Court last week Judge Dunne handed down an opinion sustaining the Illinois and Michigan Canal Commission in its suit against the Drainage Board to compel the board to continue pumping water into the old canal at Bridgeport. Judge Dunne decided that the contract made between the contestants was valid, that the Sanitary District would be liable for damage which might result from the fall in the canal level, and that it was, therefore, bound to prevent the damage, as it had contracted to do.

The sanitary trustees claim that the contract was made under duress, and that the sanitary district had no legal right to make the contract. The district will now be compelled, under the injunction, to pump water into the canal, unless the decision is reversed in a higher court or the Legislature abolishes the contract.

The decision follows in part:

The contentions of the Canal Commissioners were not only strenuously and emphatically urged before the making of the contract, but distinctly and solemnly recognized by the sanitary district in the terms of the contract itself.

The evidence in this case discloses that the canal would have been injured by turning in the waters of Lake Michigan into the drainage canal, and that because of that fact the sanitary district could not have obtained the permit to turn such waters into said channel unless it had made the contract in question.

In making such a contract was the sanitary district doing anything but recognizing its liability for all damages to real estate within or without such district, which shall be overflowed or otherwise damaged by reason of the construction, enlargement, or use of its channel, as set out in section 19 of the sanitary act?

It was in making this contract recognizing its liability for damages as provided in sections 17 and 19 of the sanitary district act, and doing what lay in its power to lessen such damage. If by this contract it accomplished this result, can it be said to have acted ultra vires?

The Legislature of the State by law declares that the canal shall be kept open and operated. Until the Legislature decided otherwise, no court has the right to interfere with its functions, and by refusing its aid to the Canal Commissioners for the purpose of enforcing a lawful contract entered into advisedly, accomplished the destruction of that which the Legislature has declared shall be preserved for the benefit of the people of the State.

The court is of the opinion that both under the law creating the sanitary district and under the contract the defendant corporation, if it injured the canal, would be liable for all damages occasioned thereby. The Illinois and Michigan canal has cost the State millions of dollars. If the defendant is allowed to repudiate this contract the zealous counsel for

the complainant will inevitably bring suit for damages against the drainage district. If the canal cost millions of dollars and is rendered useless, as this court believes from the evidence it will be if the pumping works shut down, the result of this suit may be to burden the people of the sanitary district with an enormous verdict for damages.

The exercise of common sense upon the bench is not incompatible with the performance of equity. Ought this court, sitting as a chancellor and believing, as it does, that the shutting up of the Illinois and Michigan canal will entail heavy damages upon the sanitary district, take such action as will inevitably bring about a suit for millions of dollars, brought by the canal commissioners against the sanitary district?

Ought it not preserve the present status quo, the result of a deliberately executed contract, even though it cost the sanitary district at the rate of \$100 a day, until the Legislature, in the exercise of legislative wisdom and common sense, can pass some legislation that will obviate the present awkward situation?

Believing that the denial of the prayer of this bill would entail upon the people of the sanitary district liability which might be enormous, and believing that the denial of the relief would interfere most seriously with public interests and with the rights of the taxpayers of this district, this court declares that the prayer of the bill in this case should be granted, and it is so ordered.

When President Jones, of the drainage board, was informed of the decision he conferred with several of his associates and announced that the case would be appealed to the Supreme Court. "The ruling is only a victory in part for the canal commissioners," President Jones said, "for the reason that my contention that we were only required to pump water for navigation during the season of navigation is upheld. This means that under the decision we will not be required to resume the operation of the pumps until spring, even if the ruling of the lower court is sustained by the higher tribunal. We will appeal the case to the Supreme Court and contest it to the end. If we are defeated it means an additional expense of about \$5,000 a month, which must be borne indefinitely by the taxpayers of the drainage district. I doubt whether the Legislature will relieve us of this burden, although an effort may be made to have it done this winter."

## ANOTHER ROUTE TO THE COAST.

Mr. Clergue did not say so, but from other sources it was learned that he contemplates a line of railway eastward from Sault Ste. Marie, which will give him an outlet to the sea. His idea is said to be to build a branch of the Algoma Central from Batchewana, about forty miles north of Sault Ste. Marie, eastward for a distance of four hundred miles until it strikes the Ottawa, Arnprior & Parry Sound Railway at about Whitney. From this point he could probably get running powers over that line to Montreal. The route taken would be straight eastward through that part of Algoma bounded on the north by the main line of the C. P. R., and on the south by the Sault branch of the same railway, afterwards through the districts of Nipissing and Halliburton to a point where connection could be made with either Mr. Booth's line or the Northern Pacific branch of the Grand Trunk. In the event of desiring to have a through system of his own, he would pass eastward, follow the valley of the Madawaska, and ultimately reach Ottawa. For a great part of the proposed route a charter is in existence, which was granted in 1888. There is no doubt that Mr. Clergue has great plans in contemplation, which will develop as time goes on. It is beginning to be evident by his line northward to James Bay that he proposes to tap an undeveloped country, and draw from it an abundance of raw material which he requires for his factories. These will be worked up into manufactured products at the Sault and then sent to Montreal for shipment to Europe. By having his own factories and railways he will be in a position to produce and transport so cheaply that the manufacturers of Europe will be unable to compete with him. This, however, is not all. In addition to having his own manufactories and his own system of railways, Mr. Clergue is said to contemplate running a fleet of steamers from Montreal. He already has four steamers suitable alike for ocean and lake navigation. He now proposes to order other large vessels in Europe, and this, it is rumored, is one of the reasons, apart altogether from his project for immigration, which is taking him to the other side of the Atlantic.—The Toronto Globe.

## A NEW STEAMER FOR THE ST. LAWRENCE ROUTE.

The Richelieu & Ontario Navigation Co., operating freight and passenger steamers on the St. Lawrence river and Lake Ontario, has just closed a most successful season and a record breaker as far as passengers are concerned. The company has decided to put on the Lake Ontario route another new steamer after the type of the Fall river boats, with modern improvements. The new steamer, for which the contract has been given to the Bertram Engine Works Co. of Toronto, is to be 340 feet long—that is 62 feet longer than the new steamer Toronto and 50 feet longer than the steamers Kingston and Quebec. The width will be 42 feet in hull and 73 feet over the guards; depth of hull 15 feet. The name of this new steamer is not definitely decided, but it will in all probability be called the Montreal; the present boat of that name to be renamed. There will be over 266 staterooms, including 22 parlor rooms and 8 bathrooms. The saloon will be built with two tiers of staterooms, and so arranged that a third tier can be added subsequently, which would give one-half more sleeping accommodation. The dining-room will be on main deck aft. There will be accommodation for second-class passengers on main deck forward, which will have a large number of sleeping berths. The engine is to be inclined, triple-expansion, having three cylinders and three cranks and of 3,000 I. H. P., with feathering paddle wheels and curved steel buckets. There will be six single-ended Scotch boilers, each 11 feet in diameter and 11 feet 6 inches long, with Howden hot draft. The regular service speed is to be 17 miles per hour, with ability to make 19 miles when required. The engine is of the same style as that of the steamer Toronto, but will have half more power than the Toronto's engine and a speed of three more miles an hour than that of the present Quebec steamers—one of which this new steamer is to replace. Contract calls for completion of boat in the spring of 1902.

## THE MILWAUKEE WINTER FLEET.

Steamers—Tom Adams, Amazonas, Harvey H. Brown, Fayette Brown, Mary H. Boyce, City of Berlin, Case, William Chisholm, Gordon Campbell, Thomas Davidson, John Duncan, Denver, M. M. Drake, C. W. Elphicke, R. P. Flower, Parks Foster, Oscar T. Flint, Helena, Hennepin, John Harper, Iosco, Iroquois, Henry J. Johnson, Minnie E. Kelton, S. R. Kirby, Alfred Mitchell, Maryland, Manchester, S. J. Macy, Marion, Neosho, Henry W. Oliver, Orinoco, Oceanica, Omaha, Nebraska, Thomas W. Palmer, E. M. Peck, E. C. Pope, Pueblo, Pasadena, George W. Roby, P. J. Ralph, George Stone, Adella Shores, Edwin S. Tice, Topeka, Alice Stafford, Walter Vail, L. C. Waldo, George F. Williams, A. McVittie, Delaware, Clarion, John Schroeder, George Burnham, J. W. Westcott, Hilton, revenue cutter Morrill, excursion steamers Bloomer Girl and Robert E. Burke—61.

Barges—Aberdeen, Antrim, Amazon, Athens, Baltic, Harold, George Hartnell, Sophia Minch, David Z. Norton, Olive Jeannette, Mabel Wilson, O. J. H. Hale, Grace Grummond—13.

Schooners—Ebenezer, Emily and Eliza, Ann Maria, La Petite, Grace Gribbie, William Aldrich, Vermont, Willie Loutit, G. J. Boyce, Mary A. Gregory, Nancy Dell, Eliza Day, Ella Ellenwood, Seaman, Wing, A. B. C. F. M., L. B. Coates, Elida, C. E. Wyman, Clara, Black Hawk, Kewau-nee, Z. G. Simmons, R. P. Mason, J. V. Taylor, C. H. Hackley, Mary E. Cook, Lomie A. Burton—28.

THE south magnetic pole is now located at 73° 20' S. and 146° E. Such, according to E. E. Borchgrevink, is the result of the late Southern Cross expedition, which wintered at Cape Adare, on South Victoria Land, and which made magnetic observations along the coast as far south as about 78° 45'. The magnetic dip was noted at eight places, including one point where it was measured by James Ross in 1841. The dip had decreased 1° 32', and it was concluded that the magnetic pole had shifted much to the north and west in fifty-nine years.

CRAMPS' shipyard at Philadelphia, Pa., is at present bustling with work, which keeps some 7,000 men employed week in and week out. Among other contracts in hand are extensive repairs to the engines of the American liner St. Paul, besides work on two new vessels for the same line. Two large steamers are also under construction for the New York and Cuba Mail Line, and two more for the Clyde Line. The Russian cruiser Variag is receiving her final touches, and work on the battleship Maine is progressing.



## ABOUT DETROIT RIVER BRIDGE.

The project of building a railroad bridge across the Detroit river at Detroit seems to have been effectually sidetracked for the time being. The railroads are not pushing it along in any way, in fact have done nothing about it for a long time. There is no pressure upon Congress at this time from any source for legislation on the matter. The Detroit Times says: There is no effort being made for the railroads to harmonize their differences about the location of the bridge. No man seems to be promoting a company for building the bridge. Everything is in a state of profound calm. Congressman Corliss, speaking of the matter recently said: "It is in statu quo."

Senator McMillan remarked that there would be no difficulty about legislation by Congress as soon as the railroads could agree upon the location of the bridge, and Attorney Henry Russel, of the legal department of the Michigan Central, said that no move has been made by the railroads for more than a year at least, and that nothing could be done at the short session of Congress, anyway. This means that the bridging of the Detroit river will not proceed for another year. Nothing in the way of legislation can be effected until the next regular session of Congress, beginning early in December 1901.

President H. B. Ledyard, of the Michigan Central railroad speaking of the project yesterday, said:

"Nothing has really been done about the matter for the past two years, but it is something that ought to be done. If any other city in the union had been located here the bridge would have been built long ago. The people of Detroit seem willing to be sidetracked, and that is what is bound to occur to them in case the bridge is not built before long."

"Nothing will be done about legislation for the bridge at this session of Congress. It is too late now for the short session, and Congress is busy with some very important measures. There is no special opposition to the bridge. The Michigan Senators are not opposed to it, in fact Senator McMillan positively favors it, I believe. There is no opposition from the Senators of other states bordering upon the Great Lakes. Senator Hanna has large vessel interests, but he is too broad a man to oppose the bridge. The bridge, as proposed, will not interfere with navigation. It is necessary that there should be one pier at least in the river. I had the river watched for a whole season and the routes of vessels charted, and the result showed that a pier in the middle of the river would be far to one side of the usual routes of vessels bound either up or down. It might interfere slightly with vessels that intended to stop at Detroit, but that number is very small compared to the whole volume of traffic."

"There is only one place for the bridge and that is near Twelfth street. It has been proposed to place it near Belle Isle and also below Fort Wayne. Neither of these places is available. Both would cause the trains of the Michigan Central to make long detours. The bridge at Twelfth street would accommodate both the Michigan Central and the Wabash, and those are the only roads that have any through passenger business. The other roads drop their passengers when they bring them to the western river bank. The Canadian roads are forced to see to the carriage across the river for the benefit of their own business. The American roads have always been through with their passengers at the west bank of the Detroit river, and at the east bank of the Niagara, as for example, before the consolidation of the Michigan Central and Canada Southern the Canadian road was compelled to stand all the cost of getting the people across the river. The Chicago & Grand Trunk Railroad is arranging to have most of its through passenger business cross into Canada at Port Huron."

"The bridge must be put where it accommodates the Michigan Central, for that road will do over 65 per cent. of the business across it, and will be the heaviest guarantor of the bonds. The only way the bridge can be built will be by the formation of a bridge company, and the issue of bonds, and the Michigan Central will guarantee those bonds. If the bridge is put where it is of use to it must save us time."

"I know that the vessel interests will oppose a bridge with a pier in the middle of the river," said Senator McMillan. "It would be an unnecessary obstruction to navigation, but the matter may be readily settled in another year or two. The development in bridge building will make a single span clear across the river entirely possible."

Capt. Ira R. Mansfield is again inspecting vessels at Chicago for the Inland Lloyd's register.

## NOTES.

ONE day last week the car ferry Pere Marquette made a round trip between Ludington and Milwaukee in sixteen hours and twenty minutes. She carried cars only on the eastbound passage.

CONSUL HEENAN, at Odessa, Russia, believes that American coal can be brought to the Black Sea ports and sold at a fair, if not a large, profit. The towns of Nicolaiev and Sevastopol, as well as Odessa, are largely dependent upon foreign coal. The Russian fleet on the Black Sea and all southern railways are customers for the best qualities of foreign coal, and there is no reason why the United States should not establish a permanent trade in this article. In view of the importance of the question under consideration, Mr. Heenan suggests that those of our business men who propose to engage in furnishing coal to Russia should send competent and thoroughly trustworthy men to study the requirements of the trade. He believes that coal amounting to from 800,000 to 1,000,000 tons could be sold each year.

THE Canadian government has ordered of the Safety Car Heating & Lighting Co. four Pintsch range lights and one beacon to be used near the entrances to the Soulanges canal. Two of the range lights will be located at Coteau and two range lights and one beacon will be in service at the Cascades. The range lights will show a beam of about 130 candle power and will burn for about 87 days on one charge of gas. The increase in the use of the Pintsch system of harbor and channel lighting in Canada has been quite marked during the past few years. The various styles of light controlled by this company have all been used by the Canadian government, namely: The range light, beacon and lighted buoys. It would not, therefore, be surprising to hear that the Canadian government were going to use the new combination—Pintsch gas and bell buoy, which is now being tried by the United States government.

## NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,  
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DIST.,  
CHICAGO, ILL., December 19, 1900.

CLOSING OF LIGHTS AND FOG SIGNALS FOR THE WINTER OF 1900-1901.—Notice is hereby given that the following light and fog signal stations have been closed for the winter of 1900-1901: McGulpin Point light station; Little Traverse light and fog-bell station; Mission Point light station; South Fox Island light and steam fog signal station; Poverty Island light and steam fog signal station, North Manitou light and steam fog signal station, and Squaw Island light and steam fog-signal station.

By order of the Light-House Board.

F. M. SYMONDS, Commander, U. S. Navy,  
Inspector 9th L. H. District.

## ADMIRALTY DOCKET.

UNITED STATES DISTRICT COURT, EASTERN DISTRICT,  
MICHIGAN, JANUARY TERM, 1901, HON. HENRY H.  
SWAN, DISTRICT JUDGE.

James Davidson vs. The Detroit Sulphite Fibre Co. Moore & Canfield; De Forest Paine and H. H. Swan. Demurrage. Jan. 8.

Stephen B. Grummond vs. Schr. Mineral State. J. W. Finney; Shaw & Wright. Breach of towing contract. Jan. 8.

Stephen B. Grummond vs. Schr. E. R. Williams. J. W. Finney; Ronald Kelly. Breach of towing contract. Jan. 8.

Charles Fraser vs. Schr. Emma C. Hutchinson. Chas. T. Wilkins; Shaw & Wright. Personal injury. Jan. 8.

Abel Land for himself and the United States vs. The Page Woven Wire Fence Co. Grant Fellows, Salsbury & O'Neal; Dyerfourth & Dyerfourth, Brennan & Donnelly. Penalty. Jan. 8.

Luther L. Slyfield vs. 98 Cords No. 1 Limestone. Simonson, Gillette & Courtright. Freight. Jan. 8.

Frank W. Gilchrist et al. vs. Stm. Brg. E. M. Peck. A. J. Gilchrist, F. H. Canfield; H. D. Goulder. Collision. Jan. 8.

Hans Krouse and Mark H. Hanlon vs. Stmr. F. & P. M. No. 2. H. D. Goulder; Brennan, Donnelly & Van de Mark. Fuel. Jan. 8.

Emory J. Vance vs. Prop. S. S. Wilhelm. H. D. Goulder, Simonson, Gillette & Courtright; F. H. & Geo. L. Canfield. Neg. towing. Jan. 8.

Louisa B. Grummond, Executrix, vs. Brg. Leland. Oscar M. Springer; A. G. Gilchrist. Towing. Jan. 8.

In the matter of the petition of James Davidson et al., owners of Steamship Wilhelm, for limitation of liability. F. H. Canfield; Simonson, Gillette & Courtright. Limitation of liability. Jan. 8.

James McBride et al. vs. Stmr. J. H. Devereaux. F. H. Canfield, Goulder, Wing & Holding. Collision. Jan. 8.

The United States vs. Tug Martin Swain. Alfred P. Lyon; F. H. & Geo. L. Canfield. Collision. Jan. 8.

The St. Clair County Savings Bank vs. Prop. Thomas D. Stimson. James A. Muir. Supplies. Jan. 8.

Andrew Harvey vs. Schnr. Zepotic. Campbell & Zimmerman. Wages. Jan. 8.

Robert and Eugene Schook vs. Francis F. Palms et al. Byron R. Erskin, Dufee & Allor; Keena & Lightner. Breach of contract. Jan. 8.

The Clark Dry Dock Co. vs. — Clark, owner of Schnr. Lone Star, Prin. Def't, and Alex. M. Salliotte and Gustavus Roupp, Gar. Def'ts. Whisner & Harvey. Repairs. Jan. 8.

Wm. Smith and Wm. Vendell vs. Stmr. Ohio. Whisner & Harvey; J. W. Finney. Supplies. Jan. 8.

David Manning et al. Int'g, vs. Schnr. Home. Phillips & Jenks. Supplies. Jan. 8.

The State Bank of Tonawanda vs. Stmr. A. D. Haywood. John C. Shaw and Wm. B. Cady; T. E. Tarnsey. Money advances. Referred to commissioners.

S. Harvey Reeves et al., Int'g, vs. Schnr. Ida M., her boats, etc. Geo. E. Halladay; Edward A. Barnes. Wages. Jan. 8.

Alfred C. Billingshurst vs. Stmr. Geo. F. Williams, her engines. W. E. Tarsney & W. G. Fitzpatrick. Personal injury. Jan. 9.

John Maloney vs. Tug Grace Ruelle, her engines, etc. Charles T. Wilkins. Labor. Jan. 9.

Peter Sanchereau vs. Schnr. Maria Martin, her boats, etc. Brennan, Donnelly & Van De Mark. Wages. Jan. 9.

Wm. H. Gratwick et al. v. Stmr. Pine Lake, her engines, etc., and about 35,000 feet of hardwood lumber. Harvey D. Goulder. Salvage. Settled.

Detroit, Belle Isle & Windsor Ferry Co. vs. Stmr. John Duncan. Gray & Gray. Salvage. Jan. 9.

Harris Baker vs. Schnr. Nassau, her boats, etc. Whisner & Harvey. Salvage. Jan. 15.

Estate of H. D. Edwards et al. vs. Stmr. Chauncey Hurlburt. J. W. Finney. Supplies. Jan. 9.

Harris Baker and Charles A. Chamberlain vs. Lighters Tycoon and Mikado. John C. Shaw and Wm. B. Cady. Towing. Jan. 9.

Albert Brown vs. Scow Alvina, her boats, etc. P. H. Phillips. Towing. Jan. 9.

John Donaldson et al. vs. Prop. H. J. Jewett, her engines, etc. John C. Shaw and Wm. B. Cady; Whisner & Harvey. Collision. Submitted.

James Davidson vs. Barge Alexander Holley. F. H. & G. L. Canfield. Collision. Passed.

The United States vs. 581 Diamonds. Wm. D. Gordon; G. F. & J. A. Robinson. Forfeiture. Submitted.

John Galarno vs. Schnr. Red Cloud. Law & Moore. Materials. Jan. 10.

James Davidson vs. Stmr. Walter Vail. F. H. & G. L. Canfield. Repairs. Passed.

Clara Sawyer, Admx., etc., vs. Stmr. W. P. Ketcham. Hamilton & Kirby and Ralph & Holbrook. Loss of life. Jan. 10.

John B. Sperry vs. Schnr. Anna P. Grover. W. E. Leonard. Supplies. Jan. 10.

American Steel Barge Co. vs. Stmr. Crescent City. John C. Shaw and Wm. B. Cady; Goulder, Holding & Masten, Hoyt, Dustin & Kelly. Collision, libel and cross libel. Jan. 17.

Dan H. Huyck vs. Tug Champion. George B. Greening; F. H. & G. L. Canfield. Supplies. Jan. 10.

In the matter of the petition of Henry Wineman, Jr., et al., owners of Tug Maggie Ashton, for limitation of liability. Whisner & Harvey; Anderson & Rackham. Limitation of liability. Jan. 11.

Alvin L. Dennis and Elmer E. Dennis vs. Stmr. White Star and Barge Eva S. Robinson and Luther L. Slyfield. F. H. & G. L. Canfield; Shaw & Cady. Breach of contract. Passed.

Charles A. Chamberlin et al. vs. The Frankfort Marine, Accident and Plate Glass Ins. Co. F. H. & Geo. L. Canfield. Insurance. Settled.

Earl Cross vs. Schnr. Anna P. Grover. F. R. Schell; James A. Muir. Wages. Jan. 12.

John E. Mills et al. vs. Barge Montgomery. P. H. Phillips. Towage. Jan. 12.

Timothy Hurley vs. O'Brien J. Atkinson. John C. Shaw and Wm. B. Cady; F. H. & Geo. L. Canfield. Supplies, libel and cross libel. Jan. 14.

St. Clair Steamship Co. vs. Stmr. Appomattox and Inter-ocean and Schnr. Santiago. Hoyt, Dustin & Kelley and Shaw and Cady; Goulder, Holding and Masten. Collision. Jan. 24.

John F. Harris et al. vs. The Detroit Transportation Co. Church, McMurdy & Sherman and John C. Shaw and Wm. B. Cady; Wells, Angell, Boynton & McMillan. Damages. Feb. 5.

James G. Landry vs. Schnr. John Miner. Clark, Durfee, Allor & Marston. Wages. Jan. 10.

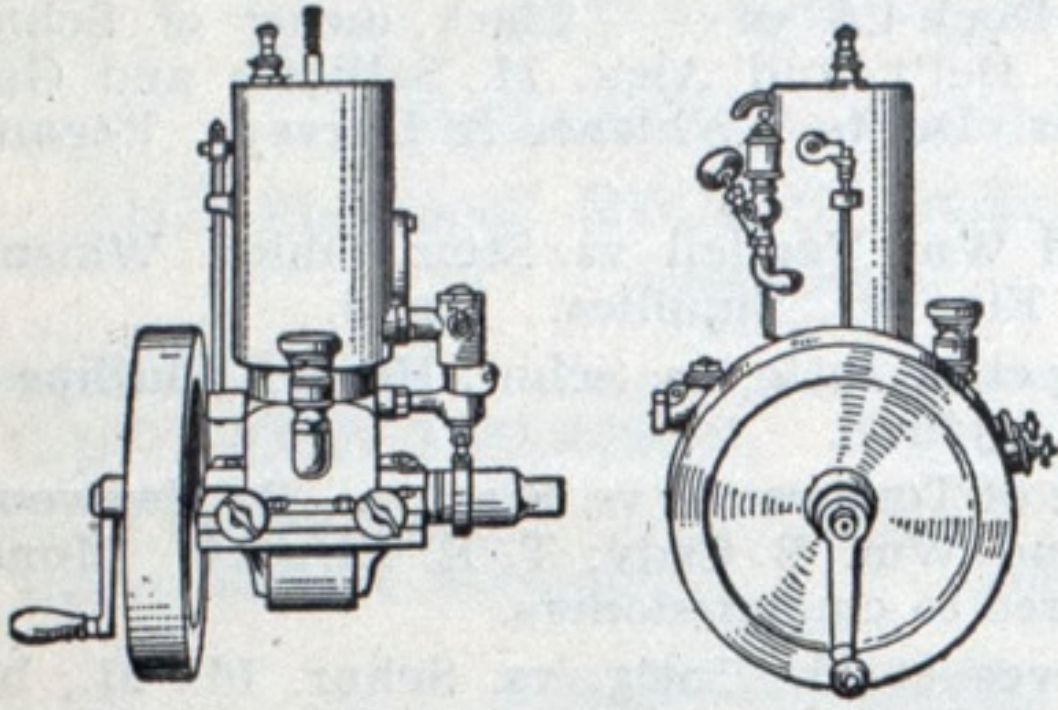
The Minnesota Steamship Co., owner of Str. Maruba and Barge Manda vs. Stmr. James Watt. Hoyt, Dustin & Kelley and Shaw and Cady. Collision. Feb. 1.

The Minnesota Steamship Co. vs. Steamships Troy and E. P. Wilbur. Hoyt, Dustin and Kelley; Goulder, Holding & Masten and Shaw & Cady. Feb. 1.



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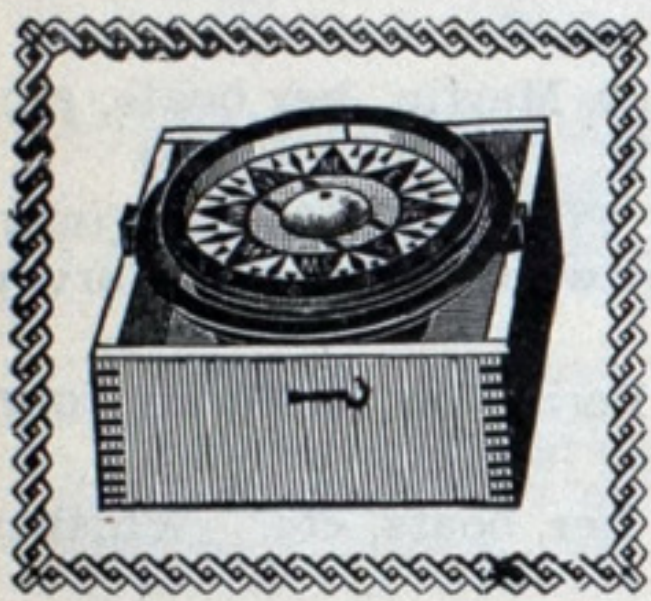
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### SEA YARNS.

A writer in the United Service Magazine spins these yarns:

"A notorious Chinese pirate having been caught and condemned, it remained to execute him. By the exigencies of the service this duly devolved on a midshipman, who with a boat's crew and his prisoner repaired to a likely spot. A tree with a convenient branch was chosen, when it occurred to the Mid to do the thing in proper style. John Chinaman should have a drop; so a drop was duly extemporized. With a bowline under his arms he was hoisted up to the branch, the halter was adjusted so as to allow the necessary scope, and then John's pigtail was hitched to the branch. The bowline was cast off, leaving the man hanging by his pigtail, with the halter in reserve, while one of the boat's crew sat astride the branch to arrange the last details. Then 'All ready aloft there?' 'Aye, aye, sir!' 'Then lower away.' One chop from a hatchet, and the pirate had not long to mourn the loss of his pigtail."

A somewhat similar story tells of a more modern Chinese robber, who got into trouble with our naval executive for perverting the morals of the squadron with bad liquor and a gambling den. After due warnings his pigtail was cut off. A local magnate protested against the severity of the punishment. He admitted that the man had received warning, but insisted that to cut off his pigtail for a second offense was not making the punishment fit the crime. "Now if they had cut off say an ear or so, and left the pigtail for a third time he went astray. . ."

One of the old-style British sea captains who was fond of conducting divine service in the absence of the chaplain on one occasion, in a discourse on the all-seeing deity, introduced the startling passage, "Some blackguard has cut the ratlines of the fore shrouds. I don't know who it is. I wish I did. I'd give him three dozen as sure as I stand here. But" (with an impressive gesture) "there's One above who knows, and he'll square accounts with that scoundrel some day."

The story goes that the last British naval commission that inquired into the dietary of the lower deck had great difficulty in finding suitable witnesses. But, at last, their patience was rewarded by the appearance before them of a warrant officer of the old school. Here, thought the commission, was the very man they wanted; a man of superior intelligence, having also a thorough practical knowledge of the question. They began by asking whether he was satisfied with the scale of diet. Well, no; he couldn't say that he was. Then what fault did he find with it? Well, it wasn't exactly that either. He didn't know that he had any particular fault to find with it. Come, now, said the commission, surely he must be conscious of some shortcoming. Did he think that the men got food enough? Why yes, said he, there's plenty of it—such as it is. Oh, now at last, thought

his examiners, we're coming to what we want! Such as it is? Then the witness was of opinion that it was not the quantity, but the quality, of the food which was to blame? Well no, answered he, I wouldn't go so far as to say that. It's good enough—what there is of it.

A growl of a different kind comes from the marines. In brigs in the old navy the custom was for the jollies to take the mainyard. And in one particular brig they found the work heavy and irksome, so that, learning from the lawyer of the watch below that they were not legally bound to go aloft, they determined to raise a protest. The protest was made in due form, and was received most encouragingly. It was quite true, said the captain, that they were not bound to go aloft, and he would see that they were not ordered aloft again against their will. But the hour of their triumph was short. When next it became necessary to furl the main-sail the marines were summoned to this duty. They were not to go aloft, they could lower the yard a-port last i. e., on to the gunwale, furl the sail and hoist the yard again. It is reported that after a very few days of this new pastime of lowering and hoisting the heavy yard whenever the sail had to be set, reefed, or furled, the marines decided that they would gladly return to their old illegal practices.

### HOME WATERWAYS.

To the Editor of The Marine Record:

"In the river and harbor bill there is an item approximating about \$200,000 for a survey of certain sections of the Illinois and Desplaines rivers, with a view to obtaining a channel fourteen feet deep to connect the Mississippi river with Lake Michigan. Were such a canal built the drainage canal would become a part of it, in which event it would come under the jurisdiction of the National Government. Then to induce Congress to pay back to Chicago the \$25,000,000 or \$30,000,000 which was expended on the canal would be the next step of the Illinois delegation."

The above is from that excellent paper, the MARINE RECORD, which understands the "sly hustlers of the windy city." The total cost to Uncle Sam, if the Chicago program succeeds will be about \$100,000,000, as the Mississippi river would have to be deepened. \$100,000,000 would provide a deep waterway from the head of navigation of the Maumee river to the Gulf of Mexico, benefit five times the population and accommodate ten times the tonnage the Chicago waterway would. The best method would be to amend the Nicaragua bill by substituting deep waterways from the Great Lakes to tidewater, in the place of Nicaragua canal. The Panama canal is being rapidly constructed and it will do all the business that is required, which is estimated at a tonnage of about 5,000,000—about one-tenth the home waterways would have. The fact that nearly 60,000,000 tonnage is now unable to reach tidewater except by going through Canadian canals is not creditable to the richest and most resourceful nation on the earth.

FOR HOME WATERWAYS.

### THE CRESCENT SHIP YARD.

The shipbuilding works of Lewis Nixon at Elizabethport, New Jersey, are just now teeming with busy artisans engaged in the construction of various vessels, and other work, and the sound of hammers and whirr of machinery is heard on every hand. At present Mr. Nixon has on hand, in addition to much private work, contracts for no less than 8 vessels for the U. S. Government, which embrace one monitor, one protected cruiser, two torpedo boats and four submarine torpedo boats.

Four torpedo launches have also been constructed for the Russian Navy, and are now almost ready for launching. They are serviceable looking craft, and are to be carried on board one of the new war ships.

Of the vessels for the U. S. Government, it is interesting to note that the torpedo boat O'Brien, recently launched is completed about 85 per cent. The U. S. monitor Florida, which occupies a prominent position in the yard, is well on towards completion, and mechanics are busy on her superstructure, decks and interior. Not far from the Florida the keel of the protected cruiser Chattanooga, has been laid, and some 13 per cent. of work completed on her. The keels have been laid and frame work completed for four submarine torpedo boats to be known as the Adder, Moccasin, Plunger and Shark. The big torpedo boat Nicholson, on the stocks, is some 81 per cent. near completion, and a submarine boat for the Holland Company, which it is said they intend to send abroad on her own bottom for exhibition, is so nearly completed that her launching, it is thought, will take place in March next.

Among private concerns there is the handsome steel auxiliary schooner yacht Genesee, which is launched and receiving her finishing touches. She is a beautiful craft, but nothing has been lost for durability, and seaworthiness. Not far from the monitor Arkansas is the steel hull of a new side-wheeler for the Old Dominion Steamship Co., while on the stocks are other craft for both pleasure and mercantile purposes. The works cover a large area, and with up-to-date machinery the company has the best of facilities for building and repairing vessels of every description, and with skilled mechanics, none but the best of work is turned out. Mr. Nixon the proprietor of the works, was formerly assistant naval constructor in the U. S. Navy, from which he resigned in May, 1891.

### MARINE PATENTS.

Patents issued December 18, 1900. Reported especially for the MARINE RECORD. We furnish complete copies of patents at the rate of 10 cents each.

663,850. Sounding tube for navigators' use. James E. Benedict, Woodside, Md., assignor to Zera L. Tanner, U. S. Navy.

663,982. Movable keel for boats. Alfred E. Preston, Looe, England.

664,152. Submarine apparatus. August Vonhoffman, Munich, Germany.



## HOW TO STOP PRIMING.

"Weren't you ever afraid at sea?" This question, the other night, brought back to my memory my first real good scare at sea. I had just left the old "Memling," 120 horse-power compound engines, 80 pounds pressure, speed 8 knots. She was a fine, easy job; oil every half-hour, and if you forgot, she didn't mind it a bit; she'd run another half-hour without bothering you or getting hot or doing anything objectionable. I left her in Sunderland, and after a month or two ashore, I "signed on" as third engineer of the "Maple Branch," a brand new triple expansion job (one of the first). I, with my six months' sea experience, was glad of the chance to go in her. The "Maple Branch" was built throughout of steel; steel decks and deck-houses. We were outward bound from London to Karachi. I had the watch usually allotted to the third engineer, the 12 to 4. After the easy time I had in the old "Memling," the "Maple Branch" was a holy terror; joints blew out, gage glasses exploded, bearings heated, and a number of other unpleasant things happened which were unknown in the "Memling." One evening at supper the chief said the boilers had primed on his watch, and told of an instance that had come under his notice, where a cylinder head had been blown out by the boilers priming. This worried me. I turned in at 8 p. m. and dreamed of priming boilers and bursted cylinders; at 12, midnight, I went on watch. The weather had been fair and the sea smooth up till this. As I passed along the alleyway to the engine room door I noticed the scud flying across the moon. By 1 a. m. the sea had gotten up, and the boat was rolling slightly. All of a sudden I heard a loud bang. My blood froze in my veins. This was it at last; my dreams had been a forewarning of what was to come. I made for the boilers. The water was sliding up and down in the guage glasses, but there was no sign of foaming. Perhaps I had been mistaken. Then, of a sudden, again came the loud bang. What was I to do? Perhaps my fireman could help me out; so I went into the stokehold and got him to come into the engine room with me. As we entered, the noise recurred. "What's that, Smith?" said I. "She's primin', sir." "What should I do?" "Ease her down a bit and I'll put the dampers on, sir." This was done, but with no success. The noise continued at irregular intervals, and, working upon my ignorance of what might happen, it had me almost in a state of nervous collapse, when I decided to tell the chief. His room was just across the alleyway from the engine-room door. I found him awake. "Well, what's the matter?" said he. "She's priming terribly," I replied. "Priming? How do you know?" "Oh, at intervals there is a bang, like a steam hammer striking a boiler plate. I have eased her down and put the dampers on, but it don't seem to do any good. What ought I to do next?" "Hook the engine room door back," he said, with a broad grin; and at that moment the ship gave an extra heavy roll, and the iron door of the engine room swung around to its iron frame and with a loud thud solved the mystery of the priming boilers.—E. A. Sunverkrop, in American Machinist.

## THE GREATEST IRON ORE MINE IN THE WORLD.

With a record to its credit of 1,000,000 tons of iron ore mined during the past twelve months, the Norrie mine on the Gogebic range may be considered the greatest iron ore producing mine in the world. This output represents about one-fifth of the annual ore supply of the Carnegie Steel Co., Limited.

The Norrie mine has been in operation during the past fifteen years. Several years ago the Oliver Mining Co., under which name the ore plants of the Carnegie interests are operated, obtained control of the Norrie mine, and since that time there have been wonderful improvements in the methods of mining and handling the ore and preparing it for lake shipment to the Carnegie docks at Conneaut. More than 3,000 tons of ore are mined and shipped each working day of the year.

The railroads which carry the product to the docks have been brought to the very mouths of the mine. The "skip" cars which convey the ore from the mine dump their contents into immense ore pockets, which in turn empty into the railroad cars waiting beneath to receive their load. When there is an over supply of ore, the surplus is dumped on the stock pile. Mining never ceases. The aspect of the Norrie mine is very different from that of the Menominee range, where great ore pits can be seen. The Norrie is a mine in the true sense of the word; for there is no open pit, no evidence of the ceaseless activity far beneath the surface.

The mine now known as the Norrie includes workings in which were four separate mines formerly known as North, East and West Norrie and the Pabst. Two additional mines, the Vaughn and the Aurora, are also operated by the company under the name of Norrie, but their product forms a separate account. If the output were included with that of the Norrie, the sum total would be much in excess of 1,000,000 tons per year.—Scientific American.

## TREASURY DECISIONS.

TREASURY DEPART., STEAMBOAT INSPECTION SERVICE,  
OFFICE OF THE SUPERVISING INSPECTOR GENERAL,  
WASHINGTON, D. C., December 5, 1900.

## STEAM VESSELS—PENALTIES.

Penalties imposed by Section 4499, Revised Statutes, to be enforced on steam vessels failing to carry the full number of licensed officers required in steamer's certificate.

Sir: There has been referred to the office of the Supervising Inspector General, Steamboat Inspection Service, a communication from Mr. George Uhler, president of the National Marine Engineers' Beneficial Association, stating that he has made complaint to your office against the steamship Winyah, for violating the provisions of her certificate of inspection by employing but two engineers, whereas said certificate of inspection (issued by the local inspectors at Philadelphia) called for three engineers.

Mr. Uhler incloses in his communication your reply to his complaint, wherein you refer him to a newspaper report of the decision that Judge Hughes, of the United States circuit court, held at Norfolk, Va., in 1890, in which the court, in what is assumed to be a similar case to that of the Winyah, held "that the violation of the rule made by the inspectors was not a violation of the statutes on the subject, that the rule in question is null and void, not being authorized by the law." In connection therewith,

you are informed that said decision has never been accepted as final by this department, except as to the particular case decided by Judge Hughes, and that even in that case the Solicitor of the Treasury was requested to instruct the United States district attorney at Norfolk to carry the case to the Supreme Court, which instructions, for reasons unknown to the department, seem not to have been carried out.

You further advised Mr. Uhler that if he desired to take any further action in the matter he should communicate with the collector of customs at New York, the home port of the vessel.

In view of the fact that the steamship Winyah was last inspected at the port of Philadelphia, in your collection district, and that the violation occurred therein, and that section 4496 of the Revised Statutes requires that "all collectors or other chief officers of the customs, and all inspectors within the several districts, shall enforce the provisions of this title against all steamers arriving and departing," it seems to this department that the question of the home port of the vessel has no bearing on the subject. You are, therefore, advised to impose the penalties required by section 4496, Revised Statutes, upon the steamship Winyah, if the facts are as charged, subject to appeal to the department for mitigation or remission under the provision of section 4305, Revised Statutes.

In case, however, the master or owner of the vessel should prefer to contest the law, the vessel should be libeled, and suit brought for the recovery of the penalties, so that a final decision may be had from the Supreme Court, if necessary, to determine whether or not the department is mistaken in its construction of the law as indicated in its decision (T. D. 9478, July 9, 1889), to which you are referred for further information on the subject.

Respectfully,

O. L. SPAULDING, Assistant Secretary.  
COLLECTOR OF CUSTOMS, Philadelphia, Pa.

The Dominion Department of Marine is calling for tenders for building two fine cruisers to be used on the Pacific Coast for the protection of the fisheries. The steamers will be built in British Columbia. The specifications of one of the steamers call for an elegantly fitted craft splendidly equipped, with a speed of twelve knots in ordinary weather. She will be 130 feet long, 24 feet beam and 10 feet depth of hold or 11 feet molded depth. She will be a wooden, screw vessel, schooner rigged, with three pole masts. Her hull will be of the best seasoned British Columbia fir, with hardwood finishings in the cabin, and her machinery is to be the finest of the kind required.



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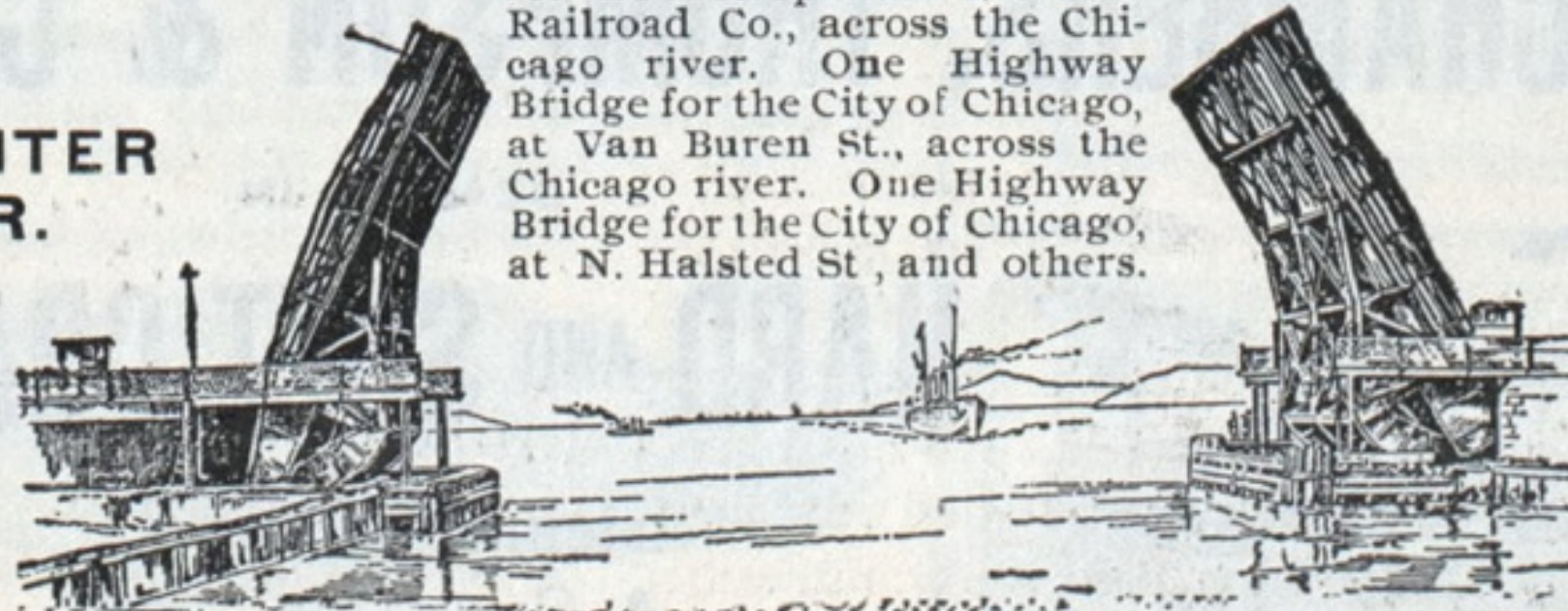
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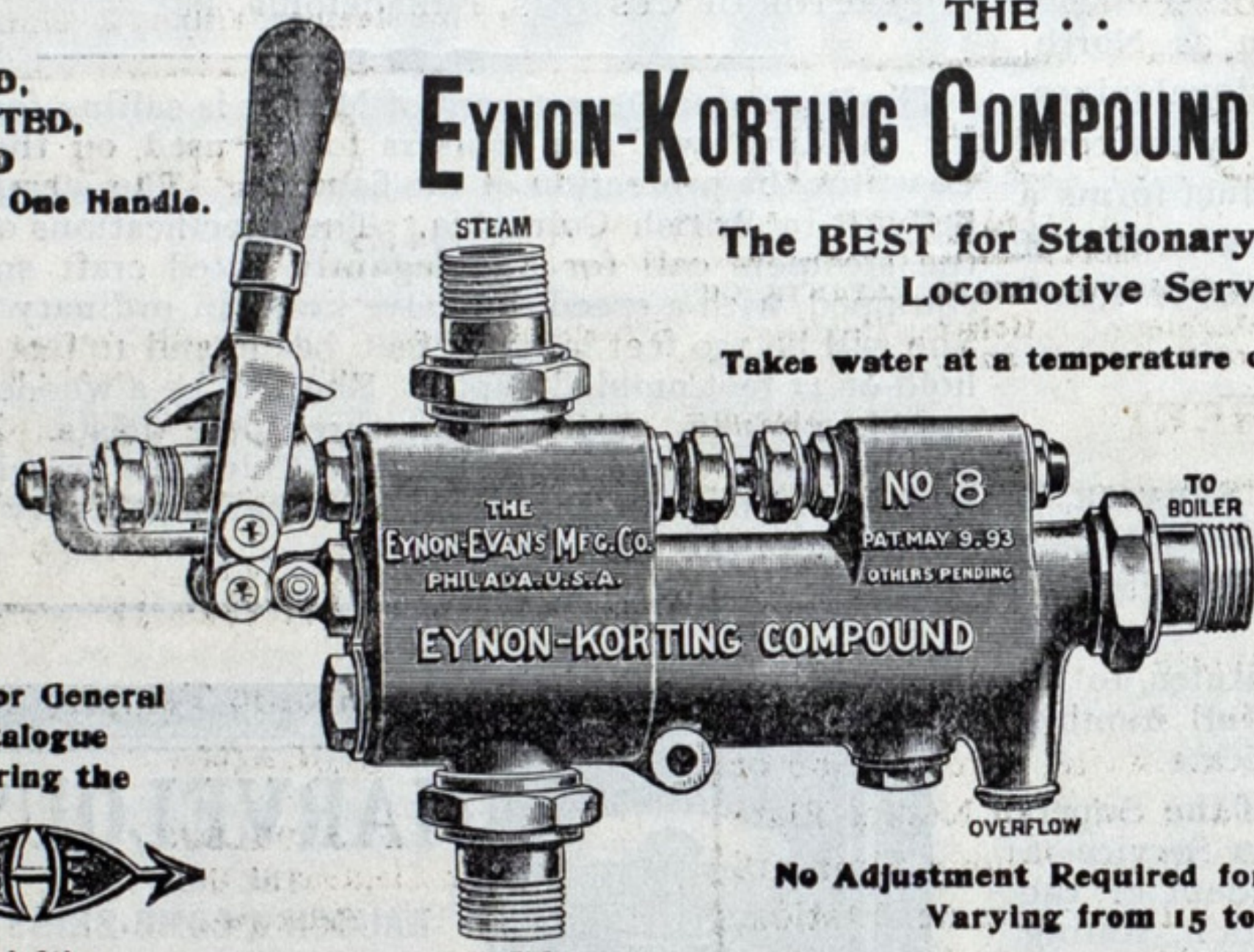
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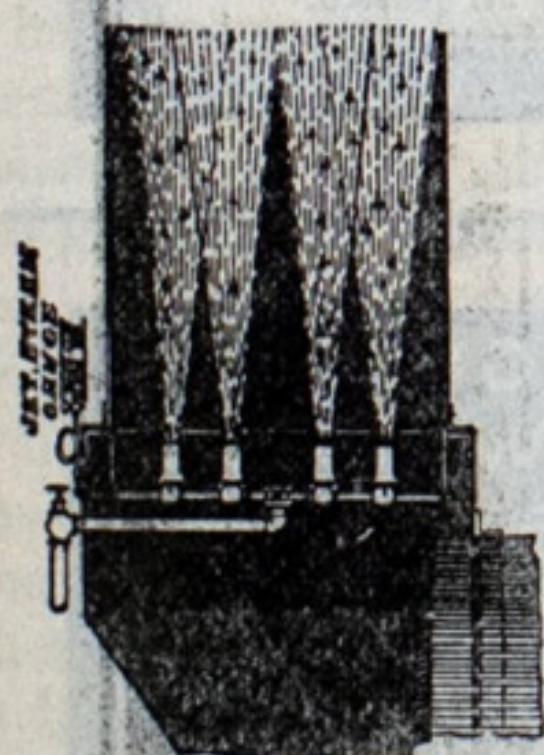
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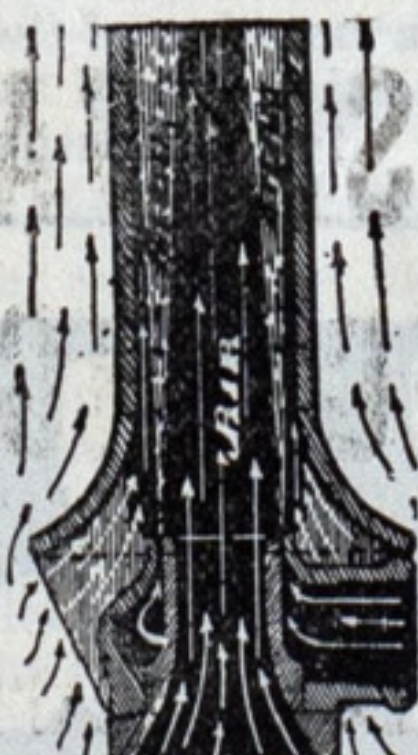
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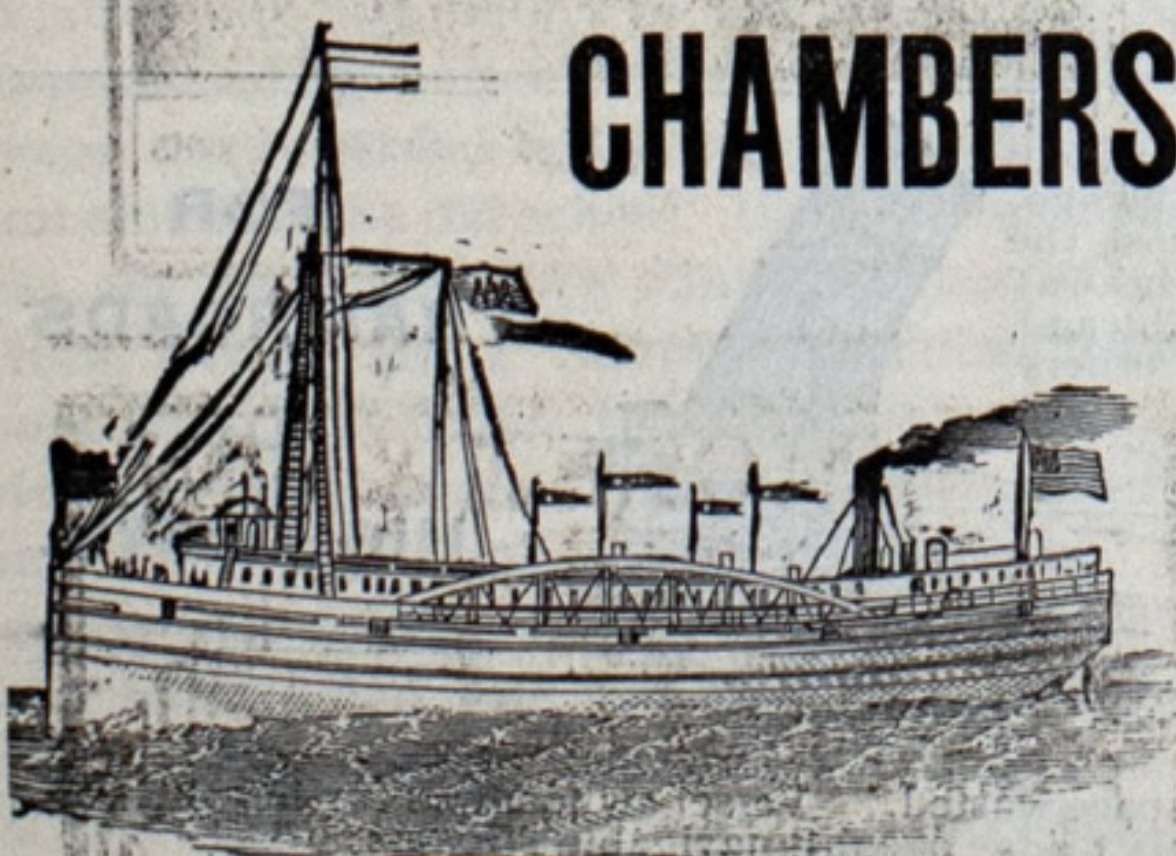
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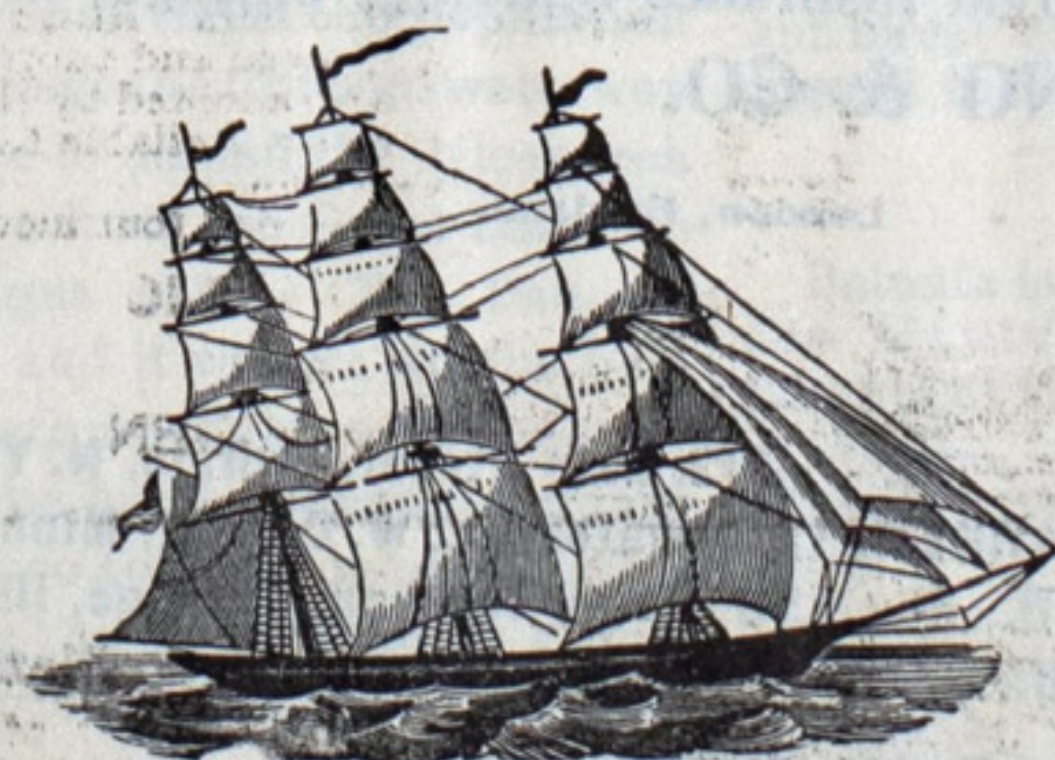
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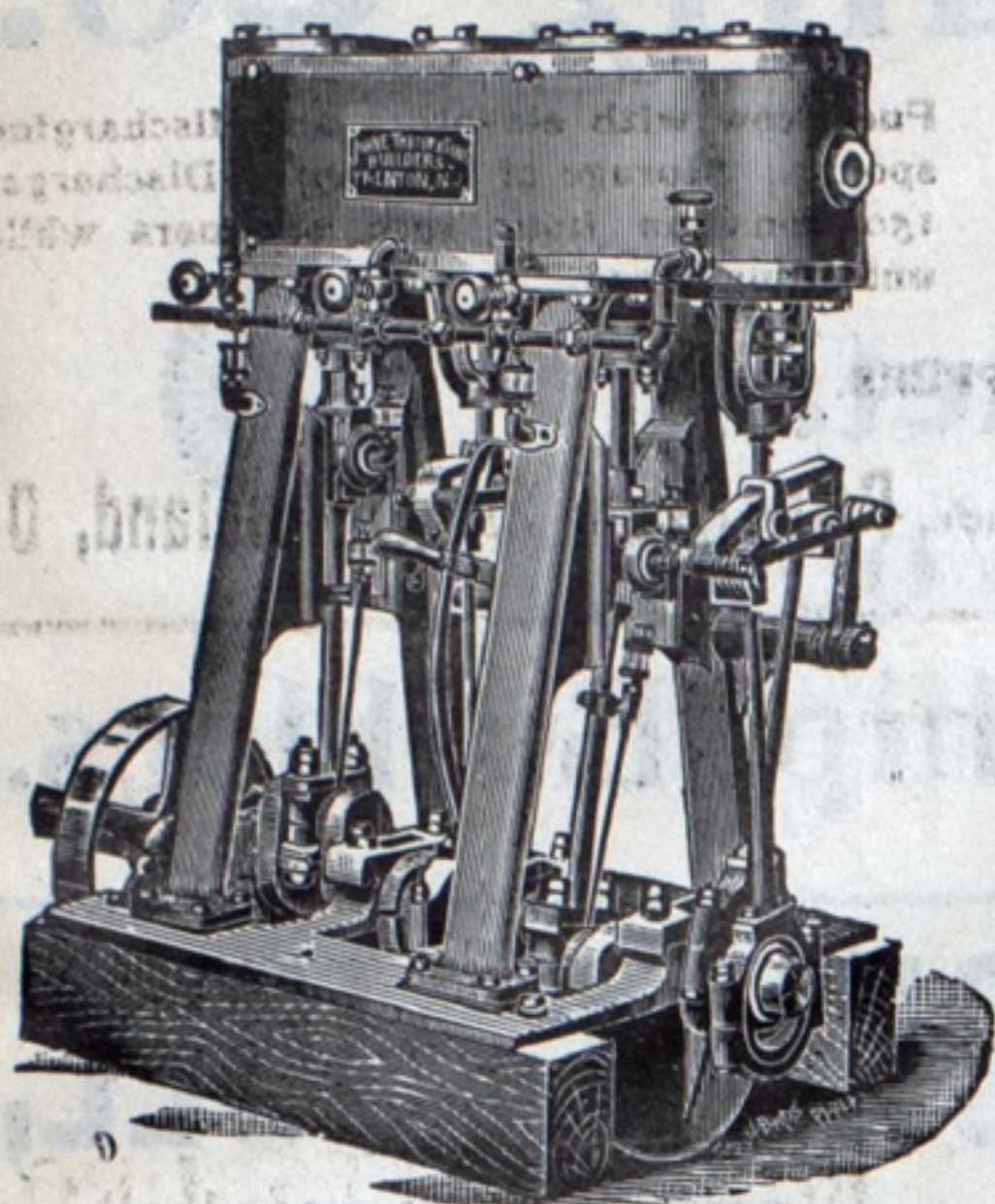
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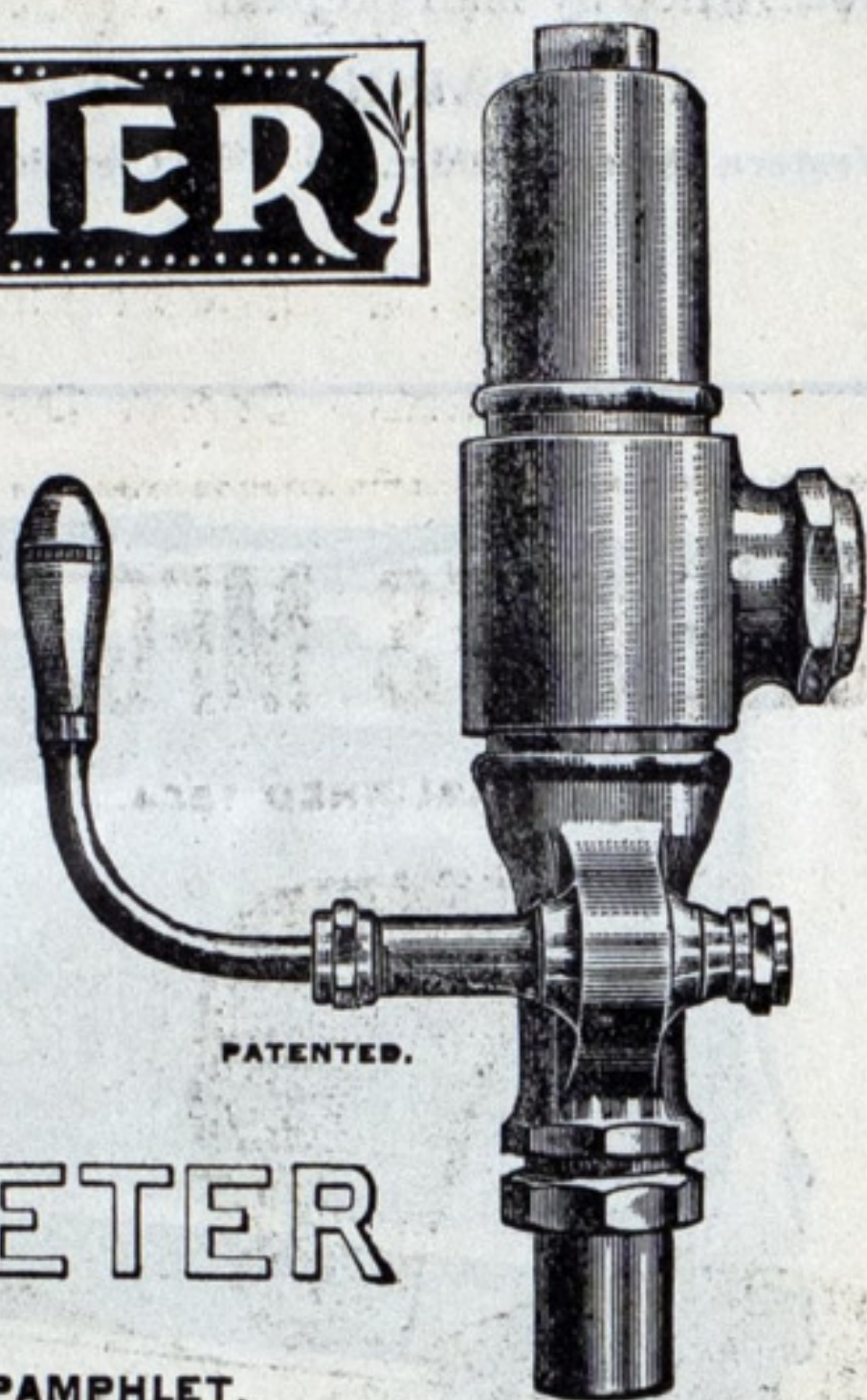
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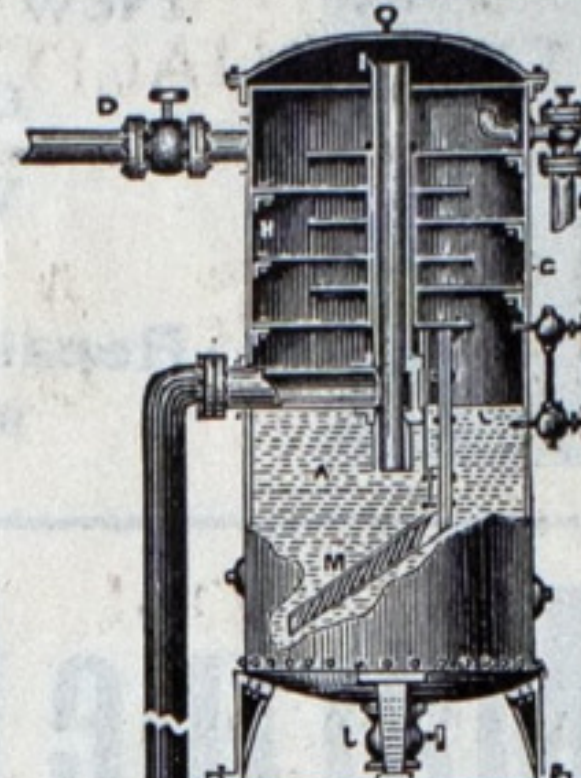
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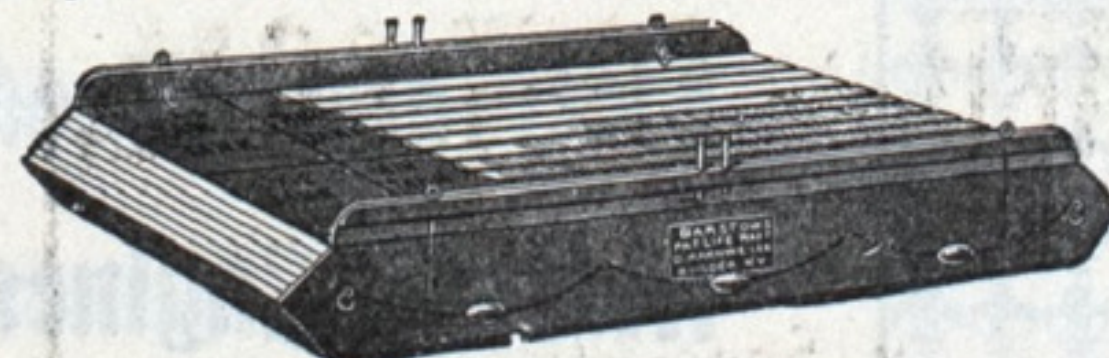
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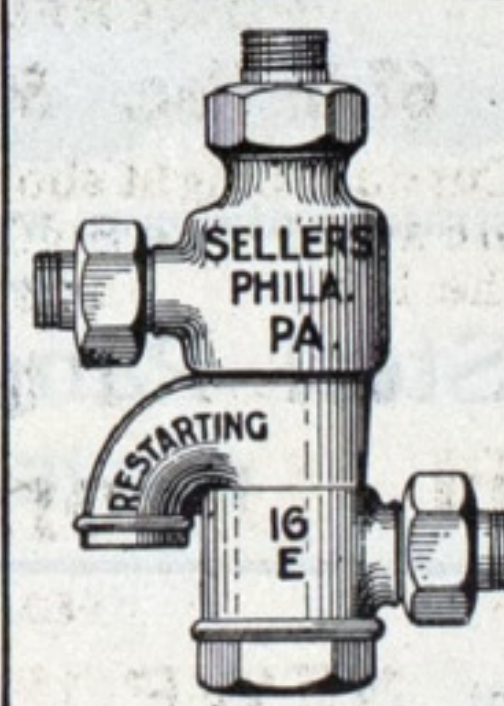
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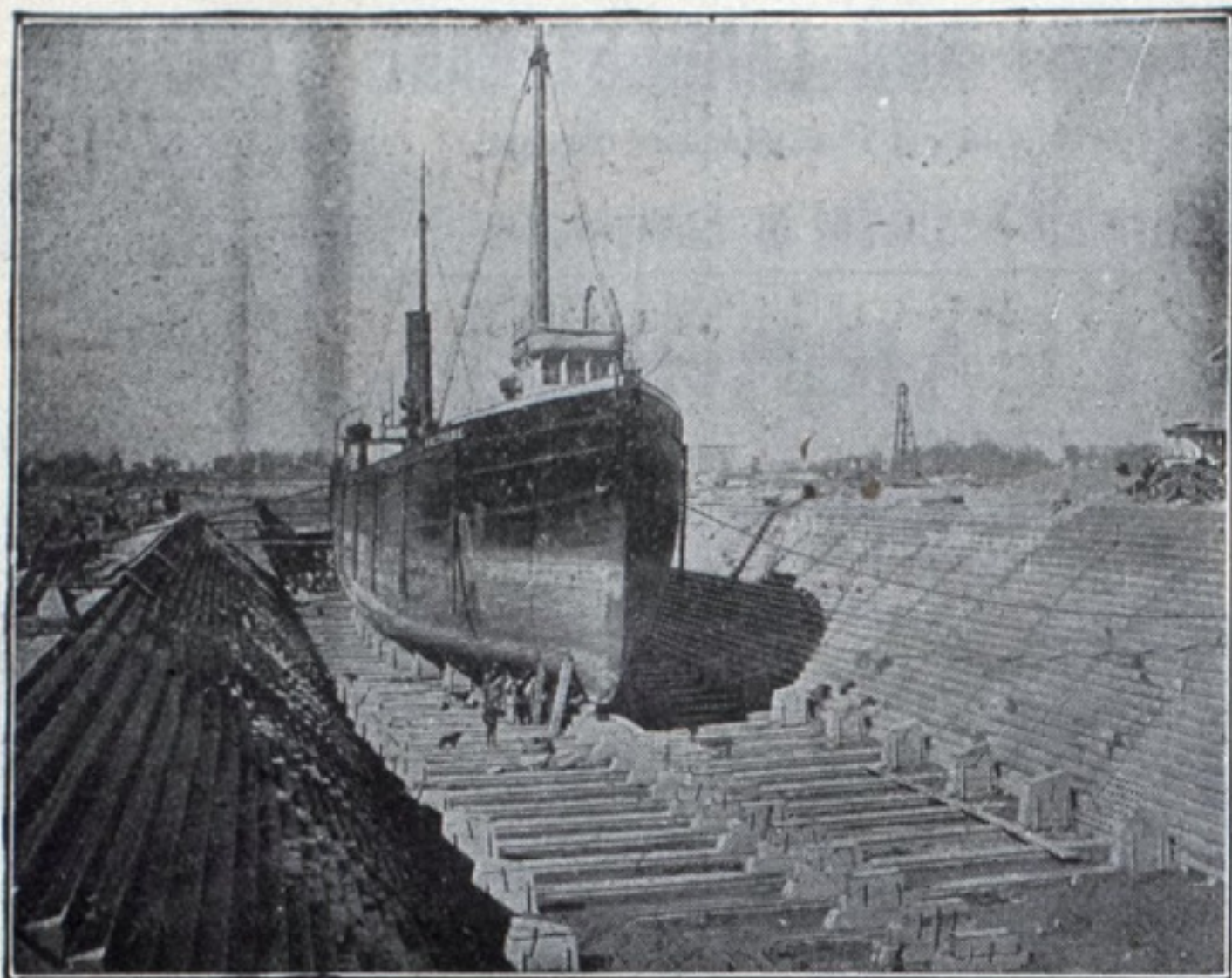
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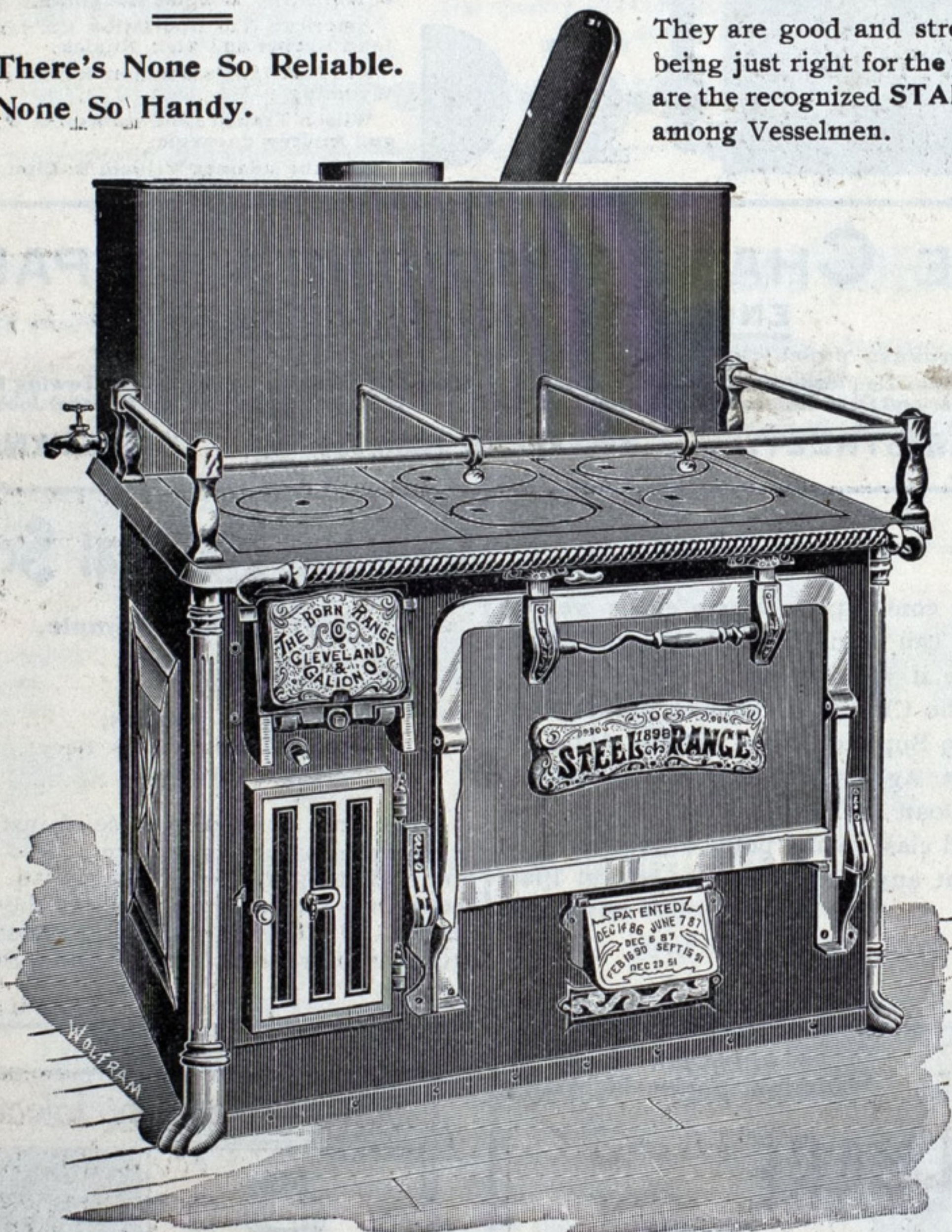
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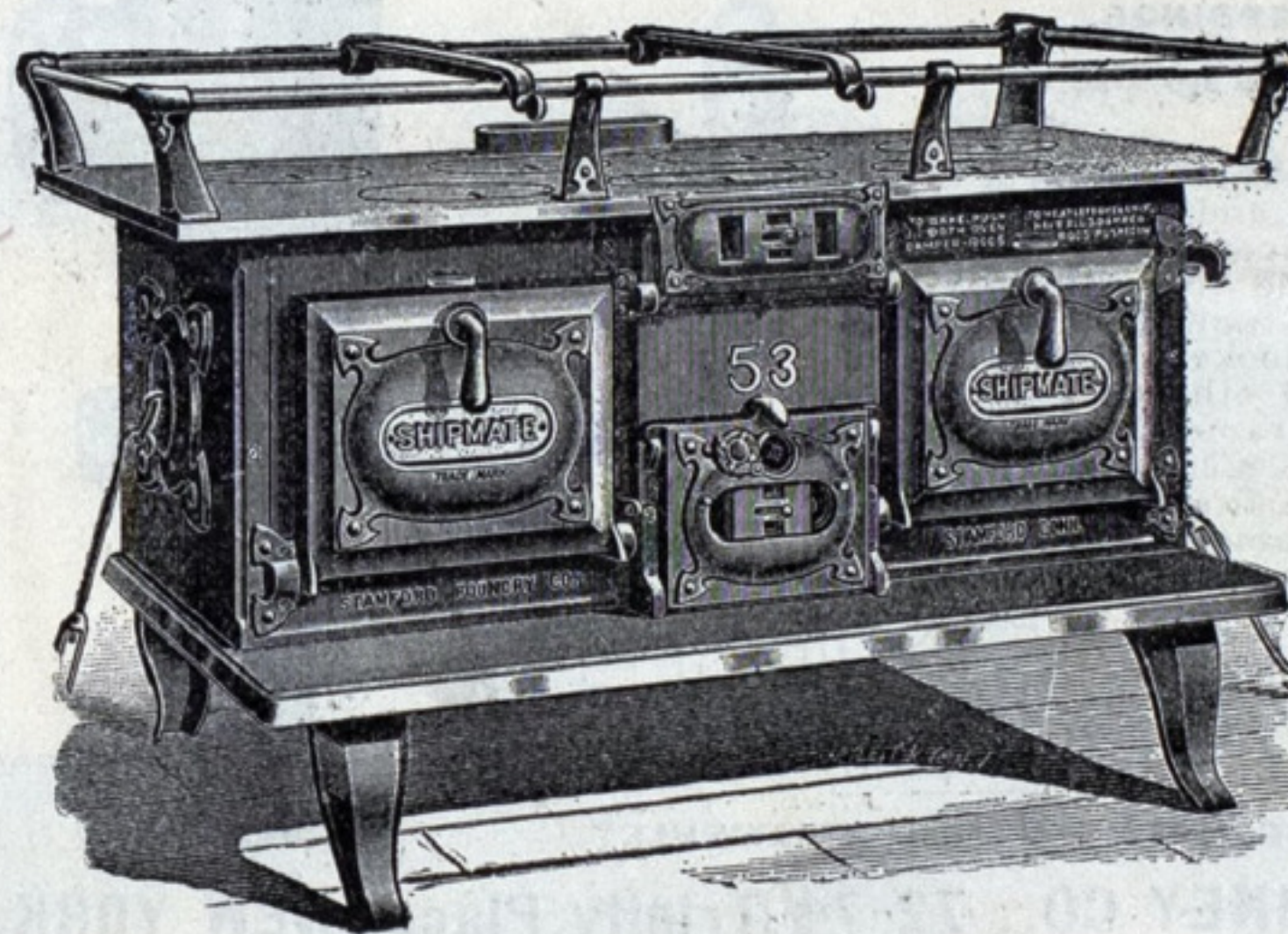
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